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Master's Thesis of Science in Education

The Relationship between  
S-OJT Participants' Trainer Expertise and  
Output of Transfer Behavior in  
Korean Small and Medium Sized Enterprises

—A Moderated Mediation Model of  
Trainer—Trainee Exchange  
with Learning Agility—

중소기업 체계적 현장직무 교육훈련의 훈련가 전문성과  
훈련전이행동 산출의 관계: 학습 민첩성에 의한  
조절된 훈련가-훈련생 교환관계의 매개효과

August, 2017

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## **Abstract**

With the recent up-rise of the concerns on reforming Korea's education and social structure to reduce its flaw – the increase on the number of young, unemployed people with higher education degrees and of small and medium sized enterprises (SMEs) that are closing down due to the lack of profit – government of Korea launched various programs and reforms for helping job seekers as well as SMEs. One of the projects that have had its course of progression is called 'Work and Learning Dual System', which was initially launched in 2013. It supports enterprises that seeks governmental support for workforce development by helping them on setting up and operating vocational education and training programs for potential employees. Under the structured format, on-the-job training (OJT) and off-the-job training (Off-JT) is provided to the potential employees, and then based on the training performance review, formal employment is proceeded. S-OJT is guided by the program for the SMEs to provide to the participants for their OJT in the workplace.

With the theoretical basis from the attributional model of Steiner, Dobbins, and Trahan (1991), this study aimed to look into the impact of trainer's competency as an instructor to the trainee's transfer of training. Also, this study found a mediating role of the trainer-trainee exchange on the impact of trainer's expertise to the trainee's transfer of training. The study also looked into the moderating effect of trainee's learning agility on the mediation effect of trainer-trainee exchange, as it may inform a possible positive moderation due to the trainee's agility of understanding and adopting new knowledge and skills provided through the training.

Data were collected for the pilot test during the March 20<sup>th</sup> to March 27<sup>th</sup>, 2017. This was done through email and online surveys. 58 participants' data were collected. After neglecting two outliers, 56 participants' data were used for the reliability and validity tests on the pilot test. After the reliability and validity tests done with the

data collected through pre-survey, main survey was continued. Both pre and main surveys were distributed to the participants of S-OJT in SMEs that are supported by the 'Work and Learning Dual System' program. Main survey was done from March 28<sup>th</sup> to April 21<sup>st</sup>, 2017. 390 participants responded the survey through email and online distribution of the survey, and 7 data were discarded as outliers. Therefore, total of 383 data were used for the study, which is suitable to be a representing a target population of 36,426 (Krejcie & Morgan, 1970).

As a result, 1) the overall mean score of the responses were within the range of 3.52 to 3.91, indicating that they were generally over the neutral. Highest was the trainee learning agility (3.91) which may be is explainable as all of the questions are hard to respond lower than neutral (Derue, Ashford, & Myers, 2012); 2) although various tests were done to seek if there are any difference of the output of transfer behavior based on the general characteristics of the participants, the study was unable to show significance to the influence of the general characteristics; 3) trainer expertise holds high accounts towards the trainee's output of transfer behavior; 4) a close relationship between the trainer and the trainee with the indication that the outcome was more heavily caused by the expertise of the trainer; 5) the learning agility does play a role in the context of S-OJT and the relationship between the trainer and the trainee, and there was a moderation effect between trainer expertise and the trainer-trainee exchange in a significant level; 6) the moderated mediation of the trainer-trainee exchange with learning agility as a moderator illustrates both the role of the learning agility as well as the trainer expertise on the ending output of the S-OJT practice.

Therefore, the implications for this research is as follows: first, to improve the overall transfer of OJT in SMEs, companies should provide necessary intervention for the development of trainer expertise, trainer-trainee exchange, and the trainee learning agility. Through the analysis, the study has found a subjective amount of effect held by trainer expertise and trainer-trainee exchange on

the output of transfer behavior; second, if the focus on the improvement of trainer expertise cannot be met, try focusing on the shaping the culture and the atmosphere of the organization so that the training held within the workplace can be influenced by the environment; third, LMX has various literatures that looks closely into the relationship with the turnover intention and the organizational commitment; fourth, there is a need for the use of subjective research instrument for the learning agility; fifth, although the current study contained no significant effect of general characteristics on the output of transfer behavior, further studies on the transfer or the transfer behavior from the S-OJT should look closely into various characteristics especially of the degree of education, types of industries, duration of the training program, and so on; sixth, this study focused on the SMEs in Korea, however, studies on the large corporates as well as the comparative study is suggested to see the difference of trainer's expertise as a trainer and not only as a senior worker; seventh, although this study used model 7 of PROCESS by Hayes (2013) that looks closely into the moderated mediation, model 6 with two mediators and model 8 with additional moderation effect on direct effect of independent variable to dependent variable is recommended as a model to be discussed in the future studies; and last, the major setback of this research is that the SMEs were the participants of the "Work and Learning Dual System" program, which is not primarily focused on providing S-OJT to the SMEs but to provide workers the opportunity to learn and work with support, thus it would be better to find different target population for sampling to make sure the proper S-OJT is held in the participatory companies.

**Keyword :** Structured On-the-Job Training, Trainer Expertise, Trainer-Trainee Exchange, LMX, Output of Transfer Behavior, Learning Agility

**Student Number :** 2015-23111

# Table of Contents

I. Introduction .....	1
1. Statement of the Problem .....	1
2. Purpose of the Study .....	5
3. Research Questions .....	6
4. Definition of Terms.....	7
5. Limitations .....	9
II. Literature Review .....	10
1. Structured On the Job Training .....	10
2. Output of Transfer Behavior .....	19
3. Trainer Expertise .....	22
4. Trainer–Trainee Exchange (LMX) .....	29
5. Learning Agility .....	34
III. Research Method .....	39
1. Research Model .....	39
2. Research Participant.....	41
3. Instrumentation of the Research .....	43
4. Data Collection Procedures .....	59
5. Data Analysis.....	60
IV. Results .....	62
1. General Characteristics .....	62
2. Measured Data of Variables.....	64
3. Difference in Output of Transfer Behavior based on the General Characteristics .....	66
4. Correlation between the Variables .....	68
5. Relationship between Output of Transfer Behavior and Traner Expertise .....	70
6. Mediation of Trainer–Trainee Exchange .....	70
7. Moderation of Trainee Learning Agility .....	72
8. Moderated Mediation of Trainer–Trainee Exchange with Trainee Learning Agility .....	74
9. Discussion.....	78

V. Summary, Conclusion and Implications .....	83
1. Summary .....	83
2. Conclusion.....	84
3. Implications.....	86
 Bibliography .....	 91
Korean Abstract .....	102
Appendix.....	105



## List of Tables

<Table II-1> Comparison between Characteristics of OJT and S-OJT .....	14
<Table II-2> Definitions of Trainer Expertise for S-OJT by Selected Scholars .....	26
<Table II-3> Emphasis on the Factors of S-OJT by Selected Scholars .....	28
<Table III-1> Research Instrumentation .....	44
<Table III-2> Related Tools on Training Transfer Behavior	46
<Table III-3> Factor Analysis Result on the Measure of Training Transfer Behavior Output.....	47
<Table III-4> Reliability Test on the Research Instrument of Output of Transfer Behavior .....	48
<Table III-5> Related Tools on Trainer-Trainee Exchange	49
<Table III-6> Factor Analysis Result on the Measure of Trainer-Trainee Exchange .....	50
<Table III-7> Reliability Test Result on the Research Instrument of Trainer-Trainee Exchange.....	51
<Table III-8> Research Instrument for Trainer Expertise ..	52
<Table III-9> Factor Analysis Result on the Measure of Trainer Expertise .....	53
<Table III-10> Reliability Test Result on the Research Instrument of Trainer Expertise .....	54
<Table III-11> Tool for Trainee Learning Agility.....	54
<Table III-12> Factor Analysis Result on the Measure of Learning Agility .....	55

<Table III-13> Reliability Test Result on the Research Instrument of Learning agility .....	56
<Table III-14> Convergent Validity Test Result.....	58
<Table III-15> Convergent Validity Test Result.....	59
<Table III-16> Statistical Methods for Specific Research Questions .....	61
<Table IV-1> General Characteristics of Research Participants .....	63
<Table IV-2> Level of Output of Transfer Behavior, Trainer-Trainee Exchange, Trainer Expertise, and Trainee Learning Agility .....	65
<Table IV-3> Result of F test on the level of Output of Transfer Behavior based on the difference of Gender .....	66
<Table IV-4> Result of F test on the level of Output of Transfer Behavior based on the difference of Age .....	66
<Table IV-5> Result of F test on the level of Output of Transfer Behavior based on the difference of Education.....	67
<Table IV-6> Result of F test on the level of Output of Transfer Behavior based on the difference of industry .....	67
<Table IV-7> Result of F test on the level of Output of Transfer Behavior based on the difference of program duration .....	68
<Table IV-8> Correlation between Variables.....	69
<Table IV-9> Linear Regression Analysis of Trainer Expertise for Output of Transfer Behavior.....	70
<Table IV-10> Hierarchical Multiple Regression Analysis of Trainer-Trainee Exchange in the Relationship between Trainer Expertise and Output of Transfer Behavior .....	71

<Table IV-11> Hierarchical Multiple Regression Analysis of Trainee Learning Agility in the Relationship between Trainer Expertise and Trainer-Trainee Exchange.....	73
<Table IV-12> Result of Moderated Mediation analysis of Trainer-Trainee Exchange with Trainee Learning Agility as a Moderator in the Relationship between Trainer Expertise and Ouput of Transfer Behavior.....	74
<Table IV-13> Conditional Indirect Effects based on the size of the Trainee Learning Agility .....	76
<Table IV-14> Index of Moderated Mediation .....	77

## List of Figures

[Figure II–1] Structured On–the–Job Training Process.....	12
[Figure II–2] Work and Learning Dual System Development Procedure .....	17
[Figure II–3] Leader–Member Exchange Antecedents and Consequences.....	32
[Figure II–4] The attributional model of trainer–trainee interactions.....	33
[Figure III–1] Moderated mediation model of trainer–trainee exchange on the relationship between trainer expertise and trainee’s performance with trainee learning agility as a moderator .....	41
[Figure IV–1] Statistical Model of Moderated Mediation of Trainer–Trainee exchange on the relationship between trainer expertise and trainee’s output of transfer behavior with trainee learning agility as a mdoerator .....	75
[Figure IV–2] Conditional Mediated Effect for Learning Agility and the Difference in the Effect of Trainer–Trainee Exchange .....	77

# **I. Introduction**

## **1. Statement of the Problem**

Since the entrance to the 21st century, the rapid development of the technology followed by the interconnection between the people around the world has created a single ‘flat’ world that human history has never seen before (Friedman, 2005). Extensive mobility of the workforce, frequent transition of technological trends, enhancement of the tools and utilities, etc. have placed more weight on the importance of agility for enterprises to stay competitive in the globalized society. It became necessary for enterprises to quickly adapt, innovate, change, learn, and act upon the fast progression of mankind (Caslione, 2003; Lee et al., 2012).

In case of Korea, the recent up-rise of the concerns on revolutionizing the nation’s education and social structure to reduce its flaw – the increase on the number of young, unemployed people with higher education degrees and of small and medium sized enterprises (SMEs) that are closing down due to the lack of earnings – and prepare for the various global trends, government of Korea launched various programs and reforms to help job seekers as well as SMEs. Ministry of Employment and Labor and Human Resources Development Service of Korea specially have their input on aiding workforce development in various industries and organizations, especially for SMEs, while supporting national transition to adopt National Competency Standard (NCS) for appreciating competency over school degrees.

One of the projects that have had its course of progression is called ‘Work and Learning Dual System’, which was initially launched in 2013. It supports enterprises that seeks governmental support for workforce development by helping them on setting up and operating vocational education and training programs for potential employees. Under the structured format, on-the-job training (OJT) and off-the-job training (Off-JT) is provided to the

potential employees, and then based on the training performance review, formal employment is proceeded.

This was a welcoming plan for the SMEs as they have hard time maintaining and effectively nurturing excellent workforce compared to the large corporations. Unlike Off-JT, OJT can provide training without necessities of having separate training site or time. It is held in the workplace as a workplace learning, making it cost-effective. However, OJT tend to become uneconomical for the SMEs as they tend to lack expert trainers and resources to extract maximum outcome. Most of the trainers who held OJT in SMEs were experts in their fields, but weren't expert as a trainer to train and nurture others. There was a need for structure to be formatted on the training performed.

Thus Structured On-the-Job Training(S-OJT) has gained its attention for its systemized setting, structure, and process. Various corporations and organizations adopted and utilized such training method to reduce various flaws. This also led to the adoption of S-OJT in various governmental programs for supporting workforce development of Korean enterprises. Along with other programs such as 'S-OJT Enterprise Support Project', 'Work and Learning Dual System' program guides enterprises to use S-OJT for their workforce development. It is a very effective method to not only develop individual's competency, but also to promote the transfer of training to the workplace as individuals receive know-how and feedback on work performance directly and actively in their workplace (Jacobs, 2003; Lee, Choi, & Paek, 2013). Due to its characteristics, the application of S-OJT in SMEs is opted as one of the reasonable strategies for talent development as it suits the condition of SMEs in the aspect of organizational support on HRD compared to the large enterprises (Choi, Lee, & Jacobs, 2015).

It is obvious to expect an improvement in employees' performance as an outcome of training. Training evaluation is held within the 'Work and Learning Dual System' program to not only see the capability of the potential employee, but also his/her development through the training programs. However, training

methods such as S-OJT has effects on factors other than just employees' performance. For example, the relationship between the trainer and trainee, which can also be leader and member within a team or department of an organization, can highly be affected by the performance of S-OJT. Due to its nature of high direct interaction between the trainer and the trainee, the exchange between the two, the trainer–trainee exchange, can easily be transformed depending on the interaction during the performance of S-OJT. The trainer's expertise on the subject matter and the training skills as well as the trainee's agile learning capacity may influence not only the outcome of the S-OJT, but also the exchange between the two, in other words, the trainer–trainee exchange.

Steiner, Dobbins, and Trahan (1991) proposed an attributional model of training to propose the application of attributional theory on identifying the interaction between the trainer and trainee. It looks closely into the attributional interactions between the two and suggest that each of their individual capabilities as an instructor and a learner may influence the interaction, relationship, and the outcome of the training itself.

In addition to the attributional model, characteristics and factors of S-OJT in SME environment and its influence on the S-OJT activities has been studied by Choi, Lee, & Jacobs (2015) and showed the impact of trainer expertise on the outcome of S-OJT activity. As the main subject of the S-OJT is the trainee, as S-OJT seeks for the improvement of the trainee more than the trainer, the importance of acknowledging the view of the S-OJT practice in the eye of trainee is evident. Also, as the interventions held for the HRD within organization tends to not only develop individual's capacity on performance, but also to retain them in the organization to transfer their learning into the workplace. Thus it is crucial to seek the impact of the relationship between trainer and trainee in S-OJT settings on the trainee's training performance outcome. To not neglect the influence of the competencies of both the trainer and the trainee on teaching and learning, the study will also look in the influence of the competency exerted by the trainer, the potential of

the trainee seems crucial to the end state of the S-OJT practice. Therefore closer look on the learning agility of trainee, under the implications of various studies (DeRue, Dai, & Hallenbeck, 2010; Eichinger, Lombardo, & Capretta, 2010; Silzer & Church, 2009) on its importance, deems to be necessary to acknowledge the impact of S-OJT.

Thus based off from the attributional model of Steiner, Dobbins, and Trahan (1991) and the studies on S-OJT (e.g. Choi, Lee, & Jacobs, 2015), this study aims to look into the impact of trainer's competency as an instructor to the trainee's transfer of training. Also, this study seeks to find a mediating role of the trainer-trainee exchange on the impact of trainer's expertise to the trainee's transfer of training. The study will also look into the moderating effect of trainee's learning agility on the mediation effect of trainer-trainee exchange, as it may inform a possible positive moderation due to the trainee's agility of understanding and adopting new knowledge and skills provided through the training. Through the analysis held within this study, it will inform the importance of the suggest variables when preparing and planning for S-OJT practice in SMEs and suggest various implementations for practitioners to have a note on while bringing S-OJT to the workplace in SME settings.



## **2. Purpose of the Study**

The purpose of the study is to investigate the mediated moderation effect of trainer–trainee exchange (LMX) on the relationship between trainer expertise and trainee’s output of transfer behavior with trainee learning agility as moderator within S–OJT settings in SMEs. With the participating SMEs of ‘Work and Learning Dual System’ program supported and operated by Ministry of Employment and Labor and Human Resources Development Service of Korea, this study aims to seek the interconnected attributions of participants’ exchange and their individual competencies on the development of trainee’s performance as an outcome of S–OJT in SMEs.

Thus, the specific objectives are as follows:

First, examine to identify the level of trainee’s output of transfer behavior, trainer–trainee exchange, trainer expertise, and trainee learning agility of the participants of S–OJT in SMEs.

Second, examine the effect of trainer expertise on the trainee’s output of transfer behavior within the S–OJT settings.

Third, explore the mediating effect of trainer–trainee exchange in the relationship between trainer expertise and trainee’s output of transfer behavior within the S–OJT settings.

Fourth, explore the moderating effect of trainee learning agility on the relationship between trainer expertise and trainer–trainee exchange within S–OJT settings.

Fifth, explore the moderated mediation of trainer–trainee exchange with trainee learning agility as moderator on the relationship between trainer expertise and trainee’s output of transfer behavior within the S–OJT settings.

### **3. Research Questions**

This study contains the following questions based on the purpose and the objectives of the research:

Q-1. What are the level of trainer expertise, trainee learning agility, trainer-trainee exchange (LMX), and trainee's output of transfer behavior within the S-OJT settings of SMEs?

Q-1.1. Are there any statistical differences on the level of trainee's output of transfer behavior in accordance to the general characteristics?

Q-2. What are the correlations of trainer expertise, trainee learning agility, trainer-trainee exchange (LMX), and trainee's output of transfer behavior within the S-OJT settings of SMEs?

Q-3. Is there a significant effect of trainer expertise on trainer-trainee exchange (LMX) and trainee's output of transfer behavior within the S-OJT settings of SMEs?

Q-4. Is there a mediating effect of trainer-trainee exchange on the relationship between trainer expertise and trainee's output of transfer behavior within the S-OJT settings of SMEs?

Q-5. Is there a moderating effect of trainee learning agility on the relationship between trainer expertise and trainer-trainee exchange within the S-OJT settings of SMEs?

Q-6. Is there a mediated moderation effect of trainer-trainee exchange (LMX) on the relationship of interaction between trainer expertise, trainee learning agility, and trainee's output of transfer behavior within the S-OJT settings of SMEs?

## **4. Definition of Terms**

### **A) Small to Medium sized Enterprise**

Small to medium sized enterprises (SMEs) are the enterprises that are categorized as small to medium sized under the Basic Act on Small and Medium Enterprises in Korea. In this study, SMEs are the enterprises that accords to the categorization of the Basic Act on Small and Medium Enterprises in Korea and receive support from ‘Work and Learning Dual System’ program held by Ministry of Employment and Labor and Human Resources Development Service of Korea.

### **B) Structured On-the-Job Training**

S-OJT is a planned process held in actual work settings with experienced employees training amateur employees on the units of work (Jacobs, 2003). It is held under the following actions: making decisions on the use of S-OJT, analyzing job of training participants, developing trainer and training module, implementation of the training, and the evaluation (Jacobs, 2003). This study looks into the S-OJT as a basic setting and the connector for the interaction between the trainer and the trainee working in SMEs.

### **C) Output of Transfer Behavior**

Output of transfer behavior refers to the measure taken after the training process by the trainees to reflect the improvement that was caused by the training. It seeks for the act, or the self-aware of the transfer of training onto the workplace to achieve performance improvement. Thus this study has utilized the questionnaire developed by Xiao (1996) to identify the output of transfer behavior from training.

It is the measure taken after the training process held within the ‘Work and Learning Dual System’ program to see if the trainee

believes that they have learned something that they are highly likely to use in the workplace, or that they have used it to improve their work performance.

#### **D) Trainer Expertise**

Trainer expertise is one of the trainer characteristics that have impact on the S-OJT activities, and it defines the amount of competency that the trainer consists to be a successful S-OJT trainer, capable of designing, implementing, and evaluating S-OJT activities (Choi, Lee, & Jacobs, 2015). This study measures trainer expertise evaluated by the trainee of S-OJT with the questionnaire designed by Choi, Lee, & Jacobs (2015).

#### **E) Trainer–Trainee Exchange (LMX)**

Trainer–trainee exchange in this study refers to the quality of exchange relation between the trainer and trainee within the S-OJT settings of SMEs. It is based from the definition of Leader–Member Exchange (LMX), which is defined as a quality of the exchange relation between the superior and subordinate within an organization (Dienesch & Liden, 1986). As the study accords to the attribution model of trainer and trainee interaction, the adoption of LMX measurement to see the exchange relationship between the two was applicable. Unlike the 4 factors of LMX defined by Liden & Maslyn (1998), this study follows the study conducted by Graen & Uhl–Bien (1995), which also sees LMX construct with multiple dimensions, but uses one measure of LMX as the dimensions are highly correlated and can be formed into a single measure. Instrumentation for research has been therefore modified to indicate the degree of inter–relationship between the trainer and trainee during S-OJT practice.

#### **F) Trainee Learning Agility**

Learning agility is referred as an individual's will to grow through a learning for quickly adapting and responding towards various new and unexpected situations in workplace (Derue, Ashford, & Myers, 2012; Lombardo & Eichinger, 2000). In this study, learning agility is mentioned as a measured outcome from the survey tool developed by Bedford (2011) which will be utilized with modification to fit the employees of Korean small and medium sized enterprises.

## **5. Limitations**

Due to the data gathering of this study, which holds participants from the "Learning & Working Dual System", there are some restraints to generalize the result of the study towards the general body of SME workers who participated in S-OJT practices. This is because the S-OJT system designed for "Learning & Working Dual System" has its independent structure that may not be similar to the general S-OJT held in SMEs.

Also, as this study utilized the LMX items to construct Trainer-Trainee Exchange items, certain items may not be quite representable for the relationship between trainer and trainee. However, when LMX characteristics are depicted, LMX puts importance of the role of leader as a leading individual who are designated to pull out most outcome or performance from the follower. This is main basis behind the structure of LMX items. This is similar to the trainer-trainee exchange in the context of this study as trainers of S-OJT are expected to pull maximum outcome from the trainee so that the newly trained employees can participate as a solid worker without any additional training activities. Still, certain items may not represent the relationship between trainer and trainee.

Lastly, all of the items were measured solely by the trainees. Therefore, the measurement might not be subjective, however as this study tends to focus on the relationship, it was acknowledged to be crucial to keep view on the trainee instead of both.

## **II. Literature Review**

### **1. Structured On the Job Training**

#### **A. Concept of Structured On the Job Training**

Structured On-the-Job Training, S-OJT, is a sequenced workplace training method that positions experienced employee as a trainer to train new or unexperienced, amateur employees (Jacobs, 2003). It is held in the actual work settings with training tasks that are or very close to the actual work tasks. The initial emergence of this concept goes back to the World War II, when Dooly introduced Training Within Industry (TWI). Later, in 1980s, Jacobs proposed OJT to be used as an innovative training intervention for organizations that seek both high quality and quantity of, and from the workforce (Versloot, De Jong & Thijssen, 2001). In 2003, Jacobs developed a criteria that separates OJT into two types: structured and unstructured OJT. Such was done through the debut of Rothwell's (1994) workplace learning and Workplace Learning & Performance (WLP). By having a structured process where skilled worker is trained to be an expert trainer and OJT module to be developed to secure the best standard of training held for the trainees, Structured OJT can now predict and insure an outcome of the training. Therefore, since then, the adoption of S-OJT in various industries can now be seen as the result of the development and expansion of the capacity that S-OJT can hold. Compared to the standard on-the-job training, or other various training methods, S-OJT can provide a high level of predictability of training outcomes as experience in specific job or task that trainer holds is assured.

Apart from the fact that S-OJT is a training method, it can also be understood as an individual training system (Jacobs, 2003). Alike other training systems, it contains the inputs, processes, outputs, and the context that relates to other systems. Inputs, in the

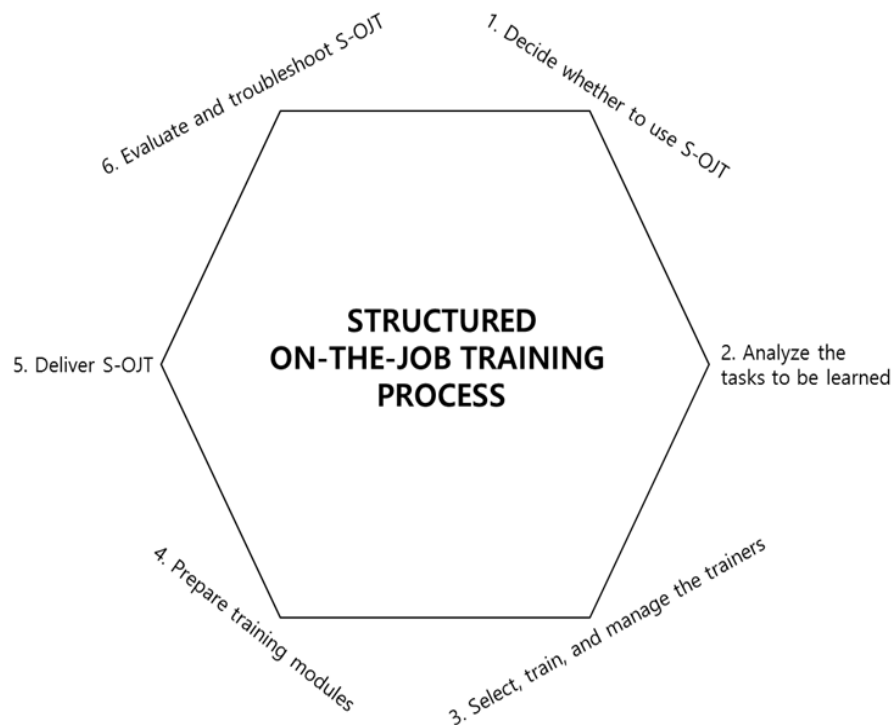
system of S-OJT, consist new, unexperienced, or amateur employee and the experienced employee, whom are termed as the trainee and trainer. Trainees, as an input, is expected to have the motivation, readiness, and expectations for the upcoming training, while trainers are expected to have various experience in relation to the job or tasks that the trainee will be assigned to, so that they will have enough knowledge and skills to illustrate and share with the trainee. Under the structured format, such basic experiences are prerequisite for trainers to have to be ready for performing as trainer in the S-OJT.

When planning S-OJT, the location or the environment of the training is crucial to be carefully considered as there could be times where exact same location as the work setting may not be available to perform S-OJT. Such constraints can be avoided by seeking for an alternative setting that contains key attributes of the actual work setting. Work, in the context of S-OJT, is the work that needs to be taught or trained to the trainee under the guidance of the training module. Although S-OJT module does not present the entire role or a job, it does show a clear tasks, assignments, or actions that are needed to be performed after the end of the training. Input, or the pathway of training, also needs to be carefully considered especially with the recent development of various communication media where the training does not limit trainer to deliver training in the same location as the trainee.

S-OJT contain a process of which includes various activities that are need to be done to have training achieve maximum outcome. For such, it contains steps such as training the trainer to be ready for S-OJT. It also includes performance ratings, observations feed backs, etc. (see [Figure II-1]).

The outcome of the S-OJT system are the results of accomplishing illustrated training objectives, impact on work, and the development of the trainee. But foremost, it is important to acknowledge the organizational context as the factors such as resources, time, people, etc. that can be utilized for the training can be limited by the work settings or the training environment.

Organizational support can sway the result of the S-OJT.



[Figure II-1] Structured On-the-Job Training (S-OJT) Process  
(Jacobs, 2003)

## B. Characteristics of Structured On the Job Training

As noted before, OJT can be divided into structured OJT and unstructured OJT. Most of the OJTs in the organizations are unintended. As such, it is difficult to get the training results that many companies expect or want. And because the general OJT depends entirely on the trainer, the quality of the OJT is often reduced if the trainer's qualities are lacking. Along with this, the typical OJT tend to be dependent on the communication and interaction of the individuals, between the trainer and the trainee. However most of the trainers are not training experts, so it is difficult to organize training system or training contents. Thus the communication and interaction led by the non-expert trainer can sometimes be affected by the personal relationship or personalities in a grave level. Also, these trainer tend to be just an expert in their



own field, it may be hard for the trainees to fully understand them, especially when they are a newly employed personnel. Sometimes the experts may not like to share their own know-hows when they feel that sharing their know-how risks them from being easily replaced by the others.

Therefore to create an effective OJT, it has been acknowledged that the training should be fully planned in advance and a more efficient instructional system should be established, covering all the tasks to be learned without being missing or duplicated. This was an introduction of S-OJT as a planned form of training that enables the novice to get the job done the fastest when they take on new tasks. Appropriate training environments, the establishment of systematic training systems, the support of skilled workers to train, and a system for measuring and evaluating the level of education and training are required during the training design phase. It is a planned process in which training is practically practiced in an environment similar to the work environment or work environment. And it is one of the best ways for companies to solve problems about organizational capabilities. Because S-OJT is based on one-on-one training, it is highly effective in training and it is the best way to improve the competency of the organization. It is also one of the ways to help members perform tasks more independently, quickly, and excellently. S-OJT has characteristics similar to general OJT, but it also has distinct aspects. <Table II-1> shows the differences between OJT and S-OJT based on the factors of the trainings. Generally, the difference between the factors of OJT and S-OJT is that S-OJT has most of its factor pre-planned when OJT may be applied instantly in response to the instant demands. Furthermore, the expertise of the trainer does not only rely on the experience and knowledge, but also the expertise on being the trainer for S-OJT is required. All of its necessities come from the fact that S-OJT is structured and systemized, with trainers who holds further responsibilities than what they used to have for standard OJT.

In a practical perspective, S-OJT provides some advantages

for the managers as the training might be held when the employee requests or is assessed to be needing training or development without asking for additional aids to the headquarter. Also, as S-OJT is held within the actual work settings, transfer of training is hardly a concern compared to the other training methods (Jacobs, 2003). The major characteristic of S-OJT is that it naturally influences transfer of training that may be neglected or be required for attention if different training method is utilized.

<Table II-1> Comparison between Characteristics of OJT and S-OJT

Factors	On-the-Job Training (OJT)	Structured On-the-Job Training (S-OJT)
Training Plan	– Training is held when necessary without and specified planning.	– Training is systematically planned prior to the actual activity.
Trainer Expertise	– Experienced employee acts as a trainer without specific manual on selecting and developing trainer.	– Trainer has the expertise on job analysis, module development, training implementation, evaluation, etc. on the planning, implementation, and evaluation of S-OJT practice.
Training Extent	– Specific task or training boundary is not set, with the training target to be on whole job.	– Target is set on specific duty or task within the job.
Training Method	– Emphasis is on the natural delivery of knowledge, information, and know-how from proficient employee to junior employee.	– Proficient employee provide necessary contents for training in accordance to the structured training implementation steps.

Understanding S-OJT as a system is quite important. It is necessary if such method will be utilized and be viewed in a practical way. Components and factors of S-OJT illustrates what are the key parts that are need to be looked into when developing such system. It also guides as a troubleshooter when a system needs an improvement after the utilization.

### **C. Structured On the Job Training in Small and Medium Sized Enterprises**

Although case studies presented in various studies show different forms of S-OJT, where there are differences in the environment, support, or the systematic structure, they still have some aspects in common. They are conducted in the actual work environment, delivered by the peer employee or the manager, and training materials that are documented is present during the training.

Still, in spite of these studies that looked in to the use of S-OJT in various sectors and industries, the in-depth of such field is still in its development status. As there are tendencies of organizations to adopt OJT compared to S-OJT because of its nature to require vast amount of preparations and possibly its fame. Nevertheless, the first study that looked into the effectiveness of OJT was done by the Lens Grinder Study in 1941 (Dooley, 1945; Jacobs, 2003). This study is unique as it looked into a planned approach of the OJT. The result showed that the length of the development of the trainee, apprentice in this case, can be shortened from five years to six months. Such study was part of the final report written by Dooley, who was finishing the TWI project during the World War II. As discussed beforehand, such project had major influenced in the study of S-OJT.

Most of the early research on the S-OJT was primarily on identifying the financial benefits of S-OJT (Jacobs and McGiffin, 1987; Jacobs, 2005). Two areas were focused closely, which were training effectiveness and training efficiency. Studies on training efficiency usually discuss about whether S-OJT took less time to deliver and less investment to be held with same, more, or less of an outcome of training. Generally, those studies illustrated that S-OJT took less time for delivery and achieved same or more objectives as unstructured OJT or other formal trainings. Additionally, such reduction of duration led to the reduction of expenditures. The amount of time and financial savings still depends

on the individual situations and organizational supports.

Very few studies thus have looked into deeply on the S-OJT practices held in SMEs, however, studies such as Choi, Lee, & Jacobs (2015) have shaved the path towards discovering more about the nature of S-OJT and its effectiveness in SME structure. This study aims to see the effect of the factors within the S-OJT system that influence the factors affecting employees in SMEs to and from turnover, which is a big concern to the general SME structures, and especially for the Korean SMEs that has the tendency of losing valuable workforce to the larger enterprises.

#### **D. Structured On the Job Training in Work and Learning Dual System**

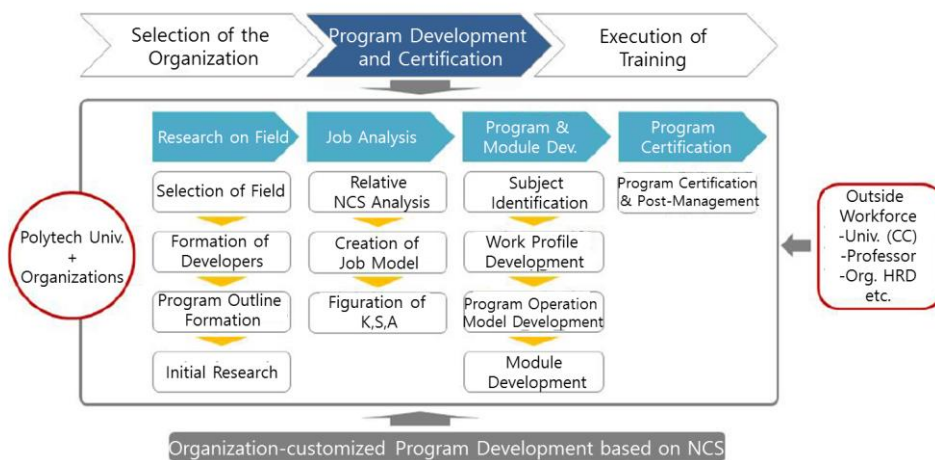
It is always crucial to recognize the best way to apply S-OJT for the best outcome. Jacobs and Jones proposed a six-step methodology to effectively utilize the S-OJT program: confirmation of the use of S-OJT for its appropriateness, job analysis, trainer training, structured system preparation, training course delivery, training improvement and evaluation stage (Jacobs, 2003). At the same time, Jacobs presents five key elements that influence training input factors: novice trainee, skilled trainer, training, work settings, and communication skills.

Jacobs (2003) especially put much notion on the skilled trainer, which will later be closely discussed as trainer expertise. He illustrates that the trainer must have all the appropriate competencies as a trainer within the unit of work. They should be those who have basic qualifications as the trainer and the job ability above appropriate level. The criteria for selection of trainer include competence in work, expertise in training, shared attitude of knowledge and function, respect for peers and juniors, communication skills such as people relations, understanding and writing of documents, interest and consideration of organization and organizational performance, and the desire to become a trainer.

In addition to the trainer expertise, training environment,

structured format of training, motivation of trainee, learning content validity, and the support of the training is crucial to identify S-OJT as a structured one-to-one training method. Therefore it is necessary to see whether the OJT held in Work and Learning Dual System is in fact S-OJT by looking into such credentials. Although the environment, motivation, contents, and the support is assumable to be done as a such credentials are basic for regular OJT programs, especially the ones supported by government, trainer expertise and the structural format of S-OJT identifies the true structural format of OJT.

The systematic design of a series of activities to plan, execute and evaluate OJT is known as a structural design of S-OJT. For effective OJT, systematic and planned training design approach to the training content is needed and should be designed more carefully and precisely. In the training transfer model study, the training input factors include the training design, the work environment, and the characteristics of the learner, which affect new learning and its memorization. For the S-OJT and Off-JT held within the Work and Learning Dual System, the systematic design is illustrated through a program development procedure as [Figure II-2].



[Figure II-2] Work and Learning Dual System Development Procedure (Korea Polytech University, 2015)

First, the program type is determined according to the company's needs and the development team is formed as internal and external experts. The team is composed of basic data of the field and the company's internal data to investigate and analyze the job according to the business duties. Therefore, NCS is derived according to the job analysis, with the developed NCS and specific job are separately developed, then the program is designed. Job model is created based on the job analysis and the derived subject from the NCS and the specified job duties that suits the program.

The trainer's competency contain a wide range of abilities such as job expertise, ability as a trainer, enthusiasm for training, and interest in trainees as an OJT leader. Jacobs illustrates that S-OJT achievements are largely divided by the capabilities of the trainers. If a trainer is not a training specialist, or if he/she is not sure how to train, and if there is insufficient training time or lack of enthusiasm for training, then S-OJT is likely to fail; thus training your trainer is key point. In the Work and Learning Dual System, there is an internal standard for selecting the trainers. In order to become a trainer, 20 hours of mandatory training and 10 hours of selective training must be completed. This accords with the Jacobs (2003) and various other S-OJT studies that notions about the point where the organizations need to be able to select and train seniors who are well trained and motivated to train, and that organizations should provide organizational support to these trainers.

## **2. Output of Transfer Behavior**

### **A. Definition of Output of Transfer Behavior**

Output of transfer behavior refers to the measure taken after the training process by the trainees to reflect the improvement that was caused by the training. It seeks for the act, or the self-aware of the transfer of training onto the workplace to achieve performance improvement. Thus this study has utilized the questionnaire developed by Xiao (1996) to identify the output of transfer behavior from training. In this study, it is focused on the behavioral output from the transfer of training through S-OJT held within the 'Work and Learning Dual System' program. Therefore, such questionnaires are formed with questions in regards to the improvement in the work performance due to the application of knowledge and skills learned from the S-OJT practices.

It can be inferred with the term trainee performance that can be illustrated in various ways as the word 'performance' broadens the whole definition of trainee performance. Depending on the context and the intention of the scholar, its definition may altered in various ways. 'Performance', in the field of human resource development or workforce development, is usually defined into two different concepts: the action held to accomplish specified tasks or the outcome resulted from the action to accomplish specified tasks (Eden & Shani, 1982). Thus when context and the target limits down into the training and the trainee, it can be defined as an action or an outcome of the action that the trainee held for accomplishing specific task which has altered due to the effect of training (Nadler and Lawler 1989). In other words, trainee performance is the outcome or an action held during or after the training in regards to the tasks given during or after the training. For this study, the trainee performance is a performance held in the workplace on the tasks of specific jobs that has been influenced by the S-OJT. Trainee's self-depiction of their improvement on job performance as a result of the S-OJT provided through 'Work and Learning Dual

System' program will be the measure of this study's trainee performance.

Due to the various definitions that the term 'performance' can hold, as well as its obvious and predictable nature, vast range of studies do not specify their terminologies in their studies (Nadler and Lawler 1989; Schmidt, 2007; Watkins, 1991). Many studies uses the term 'performance' to show the performance outcome of an individual or an organization (Nadler and Lawler 1989; Schmidt, 2007; Watkins, 1991). Therefore, when studies on training outcome illustrate the performance outcome of the trainees, they use customized tools to measure the acquisition of knowledge (Nadler and Lawler 1989; Schmidt, 2007). If differ, they use tools that asks trainer or trainees their perceived change of behavior through training (Eden & Shani, 1982; Nadler and Lawler 1989). These tools may be provided before and after training to see the difference of the performance outcome on various tasks. It could also be provided after certain time is past since the training to see if the transfer of the training has occurred in the workplace. For example, studies such as Eden and Shani (1982) research on learning performance, looks learning performance in four content areas. It was measured objectively by paper-and-pencil multiple-choice examinations and by performance tests. It was under the administration of a commander who was not informed of the experiment and was also not the trainer of the trainee. The performance test evaluated theoretical knowledge of combat tactics, topography, standard operating procedures, and various practical skills such as navigation or the weapon firing accuracy. Subjects were taught during the course and the grades were illustrated at the end of the course. Scores on the four content areas were shown to be strongly correlated, with the correlations ranged between .52 and .82, and averaged .68. Thus, the four examination scores were averaged to form a single overall measure of performance (Cronbach's coefficient  $\alpha = .89$ ).

Various approaches are in existence to evaluate training in general, and when it comes down to the trainee performance as an



outcome of the training, the focus holds on to the learning and behavior part of the evaluation. In the case of Kirkpatrick's 4-Level Evaluation Model (2007), level 2 and level 3 are the parts that concerns the trainee performance. Level 2 learning looks into the learning part, of which looks not only into the consumption of new knowledge and skills, but also the confidence and the commitment of the learners. Level 3 behavior looks particularly into the application of the learning contents, as well as various factors that may influence the application and transfer of the learning. Trainee performance looks into the subjectivity of the learning itself and its usefulness, but also the applicability of the learned contents to seek the possible transfer of training. Such may be seen as the motivation to transfer, however, the questionnaires focuses on the fitness of the learning contents toward the jobs and tasks that they will or have been assigned to, therefore neglecting the personal motives from the possible response.

### **B. Trainee Performance on Different Training Methods**

Effective training programs are critical for successful employee performance. As the facilitator of innovation within enterprises through training and development of workforce, personnel in the profession of human resource development (HRD) must serve its purpose to satisfy stakeholders by fostering individual, group, and organization to be capable to adapt, develop, and learn; enhancing individual's competencies and organization's performance (Jung & Lee, 2014; Schmidt, 2007; Watkins, 1991). Therefore, HRD practitioners need to provide an impactful interventions for the workforce and seek the factors that influences the participants to result various outcomes.

For the case of S-OJT, various studies on training effectiveness asks whether S-OJT results in better training outcomes then the other training methods, both in the performance improvement of the trainee and the financial benefits. One of the major study was conducted as an illustrative study by Jacobs

(2003), of which he compared the number of product defects done by the trainee in a truck assembly plant when the trainees were trained in unstructured peer training and S-OJT. The results illustrated that both the cost and the outcome of S-OJT was far greater than the unstructured format.

### **3. Trainer Expertise**

#### **A. Importance of Trainer Characteristics in Structured On-the Job Training**

Individual learning and performance at the workplace is facilitated through interaction between the environment surrounding the workplace and the individual, and is influenced by the unique characteristics of the organization to which the individual belongs. In particular, S-OJT from a system perspective has a dynamic relationship between input elements, including trainees participating in training, trainers, the environment in which training occurs, and the organization context to which they belong.

Trainer characteristics are experts who influences trainees through S-OJT. This means that there will be inherent characteristics of the individual that will lay effect on the performance of S-OJT. S-OJT emphasizes the one-on-one training situation between trainees and skilled trainees, and learning occurs through interaction between them. In S-OJT, the trainer develops training modules, performs training, and provides a variety of information and human networks needed to perform his / her duties even after the training has ended, so the role of trainer continues to be crucial. As the performance of organizational members is determined by the function of their own abilities and motivations, the intrinsic and extrinsic motivation factors of the professionalism and the participation of the trainees are not only the role of the trainer but also the trainees'; it can have a significant impact on OJT activities. This will be further discussed as the

trainer–trainee exchange, based on the LMX,

The expertise of the trainer is a noticable factor in determining the quality of S–OJT. In other words, the effectiveness of S–OJT activities can be enhanced when the trainer faithfully reflects his or her expertise in the training module and effectively delivers it to the trainees. In addition, most of the trainers working in SMEs have their own tasks and are performing side–by–side tasks as trainers (Choi, Lee, Jacobs, 2015). External motivation can be an important facilitator in enhancing the role of the trainer as well as enhancing the effectiveness of S–OJT activities. Intrinsic motivation implies participation in training because of the pleasure and interest in the activity itself as a trainer. The psychological attachment that the trainer represents about the role as trainer induces intrinsic motivation and makes him more engaged in his role, which can lead to the trainees' high S–OJT activity level. External motivation, on the other hand, implies that the trainer will participate in the training because of the valuable outcomes of participation in S–OJT. In this respect, providing incentives such as rewards for participating in the S–OJT to the trainee can enhance the external motivation of the trainer and ultimately lead to a high level of S–OJT activity by the trainer.

## **B. Concept of Trainer Expertise**

In the context of human resource development, expertise is defined as the optimal level that an individual can or can expect to perform in a particular area. Expertise generally includes proficiency, which is based on the fact that an individual can only acquire expertise through experience and training, including the ability to create a high level of work. Although the components of expertise vary from one researcher to another, the most fundamental components of generally accepted expertise are knowledge, experience, and problem solving. First, knowledge is largely divided into tacit knowledge and formal knowledge. In addition, tacit knowledge is informal knowledge, emotional

knowledge, self-regulated knowledge, and formalism that can be divided into declarative knowledge and procedural knowledge. For the purpose of expertise, knowledge is domain-specific and interacting with each other, but knowledge itself cannot be an expertise. Second, expertise involves a wealth of experience. Schon (1983) argues that expertise is not expressed in the process of systematically applying accumulated knowledge or skills, but rather of intuitive judgment of unexpected events in various experiences. Third, problem solving is a top priority component of expertise, manifested in recognizing problems, finding solutions, implementing them, and reflecting on them. Expert's problem solving abilities are developed through the process of solving problems through a combination of knowledge and experience. Based on the studies discussed above, expertise refers to the ability of an individual to perform professional activities in a specific area. On the other hand, previous researches that have described the expertise that existing S-OJT trainees should have presented various levels of competency required mainly for trainers. First, Jacobs insisted that the S-OJT trainer should be proficient in the unit of work that constitutes the content of the training, and be proficient as a trainer. In this case, the task expertise refers to the ability to consistently generate high performance when performing tasks, which is considered to correspond to the content knowledge of the S-OJT trainer. On the other hand, the competency as a trainer includes the completion of a specialized education program, the attitude willing to share his or her experience and competence, people relations skills, and interest in improving organizational performance.

As Lawson (1997) found that most companies are unable to find the right trainer due to a lack of skilled personnel, they have been trained to appoint the longest working person in the organization, the person who best works, or the chief or officer of the department. The basic qualities that must be provided by his trainer include job competence, communication skills, professionalism, management and organizational skills, patience and tolerance, innovative and initiative attitudes, and team spirit.

Blanchard and Thacker (2007) argued that the field trainer should act as facilitator and that the trainee would not seek to solve the problem himself if he was fully dependent on the trained trainer.

In order to more effectively perform systematic field training in Korea, the trainer should have the capacity to reflect his know-how and experience in the training module and effectively communicate the field training. In order to do this, knowledge and practical skills, teaching ability, field training design ability, field training material development ability, field training needs analysis ability, and field training planning ability is necessary. Based on Jacobs' previous research, Lee, Choi, Paek (2013) classifies the expertise of S-OJT trainer into professionalism and expertise as a trainer. Commitment to improvement, and expertise in the trainer's S-OJT as key competencies.

S-OJT is wholly based upon the one-to-one training where trainee and the skilled trainer holds an individual training. Thus the learning occurs between their interactions. During the training, trainer develops training module which can be used during the training and provides important notes that may be useful for enhancing the performance in workplace. This makes the trainer's role crucial in the setting of S-OJT. Trainer-Trainee Exchange is thus can have a vast effect on the result of the training as the interaction leads to the transfer of training.

When the terms are discussed about the word 'expertise', the general factors are illustrated as knowledge, experience, and problem solving (Herling, 1998). Schon (1983) describes expertise as a gathered knowledge or skills that are used in the unpredicted situations to act upon with instinct decision which were done from the vast experiences on its matter. By looking into various studies, the biggest factor of trainer expertise can be categorized into work expertise and training experience, which are specified into training design, communication, feedback, and andragogy (see <Table II-2>).

<Table II-2> Definitions of Trainer Expertise for S-OJT by Selected Scholars

Expertise		Definition	①	②	③	④	⑤	⑥
Work Expertise		Equipped with professional knowledge and work experience on the target work for S-OJT.	•		•	•	•	•
Training Expertise	Training Design	Capable to systematically design training objective, contents, and evaluation indicators based on the results of job analysis prior to the training activities.				•		•
	Communication	Interacts effectively with trainee during S-OJT by using linguistic and non-linguistic expressions.	•	•	•	•	•	•
	Feedback	Clearly state points to improve through observation on trainee's activities.				•		•
	Andragogy	Understand the characteristics of trainees, their method of acquiring knowledge, skills, and attitude, and their way to apply what they have learned.		•		•		•

① Lawson, (1997), ② Rothwell & Kazanas, (1994), ③ Jacobs, (2003) ④ Blanchard & Thacker, (2007), ⑤ Lee, Choi, Paek, (2013), ⑥ Choi, Lee, & Jacobs, (2015)

### C. Trainer Expertise and Structured On-the-Job Training

In previous studies on the relationship between trainer expertise and S-OJT activities that consisted only 153 domestic workers within three years of working in a large corporation, Yoo showed a statistically significant effect of trainer capacity on S-OJT level ( $\beta = 0.267$ ,  $p < 0.01$ ). In a study conducted by Park (2010) with 132 employees working in domestic financial institutions and IT industries, it found that the trainer ability had a statistically significant effect on the activation level of S-OJT ( $\beta = 0.222$ ,  $p < 0.05$ ). In a study of 105 SME workers participating in the

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on-the-job training support project, there was a statistically significant correlation ( $r = 0.689$ ) between the S-OJT trainer capacity and S-OJT performance level.

#### **D. The Relationship between Trainer Expertise, Trainer-Trainee Exchange and Trainee Performance**

<Table II-3> shows various literatures that pinpoints specific factors of S-OJT to illustrate its uniqueness in comparison to the other general training methods. Based on the definition of S-OJT and the contents of the study, the emphasis on specific factors of S-OJT is illustrated. Various studies have emphasized trainer expertise on the process of S-OJT as the preparation of trainer is important and unique from the other training methods, especially the standard OJT. As these studies see trainer expertise as one of the crucial factors that influence the trainee performance outcome in both training settings as well as actual work settings, such factor is emphasized and implicated.

Study done by Choi, Lee, & Jacobs (2015) looked into the hierarchical linear relationship among S-OJT activities, individual level variables, and organizational level variables of workers in SMEs. Within the individual level variables, the trainer expertise and the trainee learning agility is discussed as a factor of both trainer's S-OJT activity as well as trainee's S-OJT activity. It is seen as the attributions that has an effect on both behaviors of trainer and trainee, which effects the trainee's performance outcome at the end.

However, in general, there are insignificant amount of studies that closely looks into the trainer expertise and its effect on the trainee performance. As it seems obvious that the higher trainer expertise would lead to the increase in trainee performance, such studies weren't much done except to support the notions on S-OJT.

<Table II-3> Emphasis on the Factors of S-OJT by Selected Scholars

Scholar	Definition	Emphasis on Training Location	Emphasis on Training Planning	Emphasis on Trainer Expertise
Jacob, Jones, & Neil (1992)	One-on-one planned training that provides necessary knowledge and skills required for performing specific duty within the job.		•	
De Jong (1993)	Purposely structured and organized training in workplace held by proficient supervisor or colleague.	•	•	•
Rothwell & Kazanas (1994)	Planned instructional activity that delivers things that trainee needs to know or proficiently perform.		•	
Jacobs & Jones (1995)	Planned training developed by proficient employee in accordance to the novice employee's level of tasks within the workplace or in similar settings.	•	•	•
Yang (1995)	Planned training given by managers with instructional skills to develop employee's procedural knowledge to perform specific tasks in workplace and similar settings.	•	•	•
Sullivan & Smith (1996)	Individualized training provided by proficient supervisor or senior employee to aid novice employee on acquiring necessary knowledge with activities to develop necessary skills and enhance performance outcome.			•
Jacobs (2003)	Planned process of having experienced employees train novice employees on units of work in the actual work setting.	•	•	•
Jacobs & Park (2009)	Activity held by instructor or trainer actively involving in learning process within workplace, with training contents and methods planned prior to the activity.	•	•	•
Choi, Lee, & Jacobs (2015)	Training approach that delivers feedback and know-how essential for improved job performance directly at the work setting, enabling individuals to acquire job-related knowledge and skills and apply the learned information.			•



Still, it is crucial to look into the possibilities of which trainer expertise may cause no change in trainee performance, or even worse, cause negative effect. This can be seen as possible when the situation is looked under the attributional model (Steiner, Dobbins, & Trahan, 1991). If trainer has high expertise, trainee may have various type of reactions; one may be excited and motivated to learn from an expert, but also can have fear that one may not reach the expectations of the trainer. Thus the motivation may be altered depending on the self-efficacy or learning agility of the trainee. For such reasons, it is crucial to look into the exchange between trainer and trainee, as such variable makes the following research model unique and useful for the adaptation and preparation of trainer in S-OJT.

## **4. Trainer-Trainee Exchange (LMX)**

### **A. Definition of LMX**

Recently, the concept of leader-member exchange (LMX) theory of leadership has received considerable attention in the area of empirical research. When it was first introduced, it received attention mainly for two reasons. One, it focused on the dyadic relationships between leaders and the followers, and two, LMX made a notion that leaders do not consist same type of relationships with every followers. In specifics, the theory illustrates that the leader have different interactions depending on the followers thus have different relationships from that.

Researches on the LMX theory primarily was focused on the outcomes of the relationship, and meta-analyses studies confirmed various relationships between LMX and the attitudinal and behavioral outcomes (Ilies, Nahrgang, & Morgeson, 2007).

Theoretically, LMX was evolved from the role theory (Graen & Scandura, 1987) but transformed to be based on social exchange theory (Kamdar & Van Dyne, 2007). Low level of LMX relationships are acknowledged as having basis on the economic exchange that are constructed formally (Blau, 1964). Meanwhile,

high level of LMX relationships has basis on the mutual obligation and trust (Liden, Sparrowe, & Wayne, 1997).

Relationships built in the workplace focuses more on the social exchange rather than economic exchange, which is characterized by loyalty, commitment, support, and trust (Uhl-Bien & Maslyn, 2003). High level of LMX is thus characterized as a having an increased affective attachment between leaders and follower (Liden & Maslyn, 1998; Maslyn & Uhl-Bien, 2001; Uhl-Bien & Maslyn, 2003).

### **B. Relationship between LMX and the attribution of Leader**

Even though the leaders are the dominant figure in the establishment of the LMX, followers also do have a major influence in the process (Dienesch & Liden, 1986). This is different from the various leadership theories, which illustrates that the leader's characteristics and behaviors are mainly the core influence over the follower's attitudes and behaviors. Lord and Maher (1991) mentioned that in the dyadic relationship, both of the participants influences each other, which supports the LMX theory. Matter of fact, the relationship formed in the workplace is conceptualized as a continual interaction between the participants (Ferris et al., 2009). In the words of Snodgrass, Hecht, and Ploutz-Snyder (1998), although the interaction is dependent towards both parties, dependency tends to be greater for followers comparably because of the power differential. When individuals have their outcome to be highly dependent to the other individuals, it motivates them to be closely inclined to the characteristics of the participant of the dyadic interaction. This leads toward the possible adaptation of LMX in the relationship between trainer and trainee of S-OJT, as they are in a dyadic relationship with trainer having upper hand, even with a power to evaluate the trainee. Further discussion will be illustrated afterwards.

Leaders are also structured to be dependable to the followers for the accomplishment of objective, making the relationship not so much leaned toward the leaders. The main assessment point of the

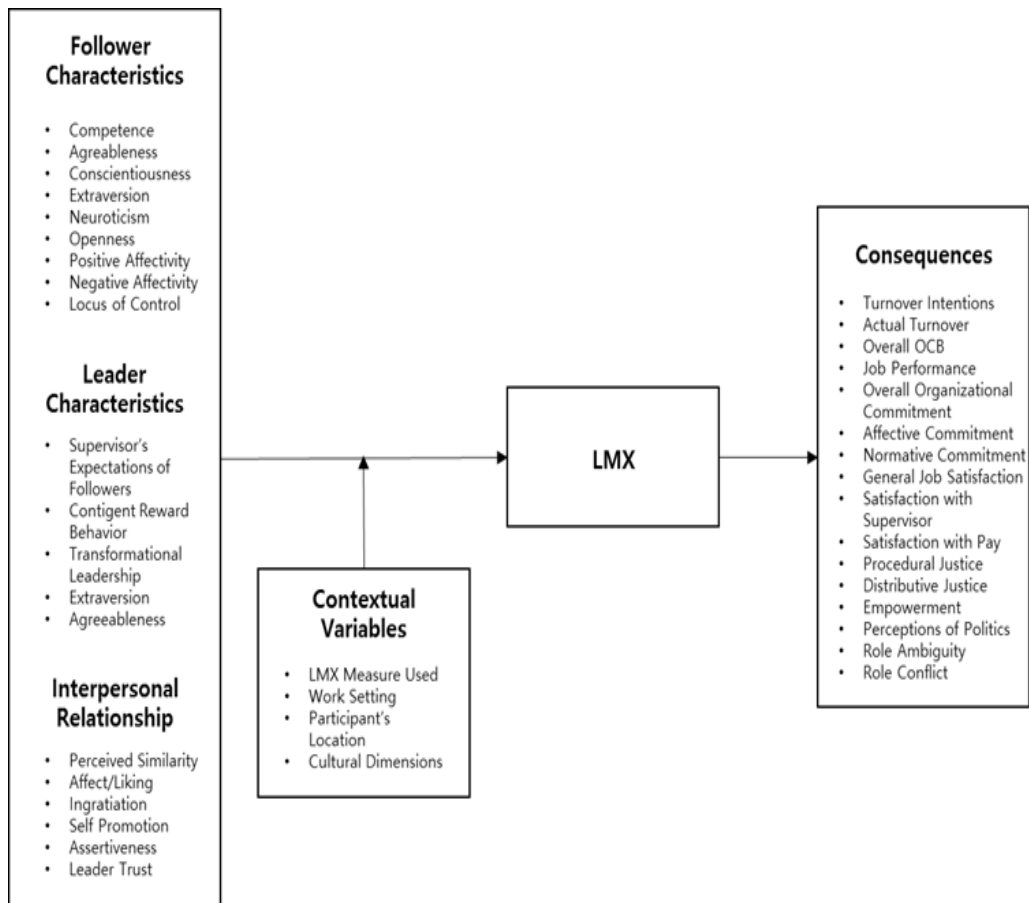
LMX is how each participants see their relationship with the other (Snodgrass et al., 1998).

### **C. Antecedents and Consequences of LMX Framework**

[Figure II-3] was presented as the model of LMX antecedents and consequences that provides the theoretical framework for the meta-analysis on LMX (Dulebohn et al., 2012). To be specific, as moderated by contextual variables, follower characteristics, leader characteristics (i.e., behaviors, perceptions, and personality), and interpersonal relationship variables are shown to influence LMX relationship quality. This model highlights the main point of the study, which was to look into the cumulative research on the antecedents and consequences of LMX and examine moderators of the relationships. Such is shown for this study to relate to the trainer-trainee exchange which will further be discussed with the attributional model of trainer-trainee interaction.

Literatures and studies on the LMX antecedents and consequences tend to study and illustrate two major viewpoints. First, they illustrate various correlations within and in relation to the LMX, and mostly on the viewpoint from either the leader or the member on looking toward their exchange relationships. Second, most of the studies on LMX are cross-sectional, therefore it could be vise-versa or reversible.

Unlike S-OJT practices occurring in the scene of large corporations, where the trainer and trainee is selected under the structured format indicated on the literatures to pursue a best outcome, S-OJT practices held within small and medium sized enterprises tend to choose trainer and trainee within a department or team (Choi, Lee, & Jacobs, 2015). Thus it can be countable to link the exchange between the leader and member with the trainer and trainee, if each roles are participated accordingly.

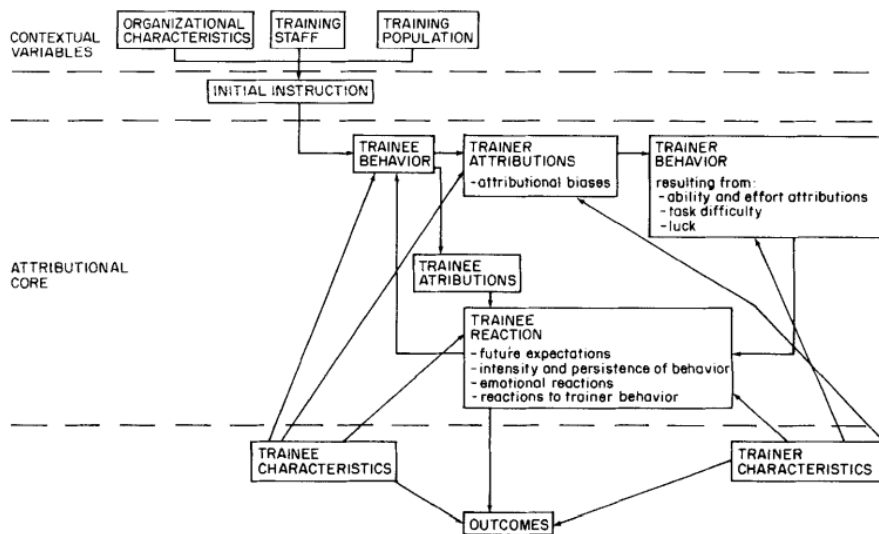


[Figure II-3] Leader–Member Exchange Antecedents and Consequences

Theoretical Framework developed by Dulebohn et al. (2012)

This study, therefore, uses LMX to seek the exchange between trainer and trainee, and use the term leader–member exchange to illustrate the relationship between trainer and trainee within the context of workplace. Instrumentation has been thus modified to suit the target population, while maintaining the key focus held with LMX–7 tool.

## D. LMX in the Context of Trainer–Trainee Exchange



[Figure II–4] The attributional model of trainer–trainee interactions, developed by Steiner, Dobbins, and Trahan. (1991)

Steiner, Dobbins, and Trahan (1991) proposed an attributional model of training to propose the application of attributional theory on identifying the interaction between trainer and trainee. It looks closely into the attributional interactions between the two and suggest that each of their individual capabilities as an instructor and a learner may influence the interaction, relationship, and the outcome of the training itself.

Thus based off from the attributional model of Steiner, Dobbins, and Trahan (1991), this study aims to look into the effect of trainer’s capability as an instructor on the exchange between the trainer and the trainee as well as the trainee’s performance outcome after the completion of the training. The study also looks into the impact of trainee’s capability as a learner, especially on its agility of understanding and adopting new knowledge and skills provided through the training, on the relationship between trainer expertise and trainer–trainee exchange.

## **5. Learning Agility**

### **A. Definition of Learning Agility**

Researches on the field of human resource development has been recently focusing on the individual's learning agility and its impact on the organizational performance. A research done by Center for Creative Leadership has found out that experience was one of the major factor for employees' development in the workplace. Its result has shown that 70% were from experience, 20% from cooperation, and 10% from formal training. In accordance with the research, various studies (Eichinger, Lombardo, & Capretta, 2010; Silzer & Church, 2009) have illustrated the impact of experience in the workplace on the employees' performance.

Such illustration has led to the alternative view on acknowledging talented employees. It has been a tradition to categorize employees with high performance outcome as "talents", but with the study done by Corporate Leadership Council (2005), the standard is being argued for change. The study has indicated that only 30% of human resources consist high potentials. Swisher's (2013) study added that 93% of those human resources with high potential create majority of organization's performance outcome.

All adults have different learning styles, and even with the same experience they can have different learning outcomes. This means that each adult has a different ability to learn through experience. Learning agility is a concept based on the characteristics of these adult learning, and is emphasized as an crucial personal characteristic that determines individual performance and career success. Learning agility is a concept that is distinguished from an individual's cognitive trait or personality. It is not an internalization of an individual, but a willingness to learn the kind of learning ability that an individual possesses or the competency needed for his development in a new situation. Therefore, learning agility is an ability for individuals to learn quickly through experience, to be flexible in deriving new ideas, to maximize the value of learning in a

given situation, and for those with high learning agility to be curious about new ideas and methods. Based on this definition of learning agility, the most notable characteristics of learning agility are summarized as 'degree of value for learning' and 'degree of utilization of learning for individual growth'. First, learning agility is to encourage individuals to pursue learning and to value learning to achieve their goals. Individuals with a high level of learning agility are interested in learning about people, ideas, and likes to learn and use learning to solve problems. Therefore, a person with a high level of learning agility will continually learn to find new situations or ways to solve problems. Second, learning agility allows individuals to recognize their strengths and weaknesses, develop their strengths, and utilize learning to overcome their weaknesses. Therefore, an individual with a high level of learning agility looks at himself critically, exposes his weaknesses to others, and develops himself through feedback and advice.

On the other hand, in Lombardo and Eichinger's study (2000) of core talent learning, based on the definition of learning agility, the sub-factors are the people agility, results agility, mental agility, and change agility.

First, interpersonal agility means that an individual accepts others with open mind, possesses excellent interpersonal skills, and copes with a variety of interpersonal and difficult situations. Individuals with high levels of interpersonal agility know themselves well, learn through experience, form constructive relationships with others, and respond positively to change. Second, result agility means the extent to which an individual constructs an individual's strength or team, even in new or difficult situations, to produce results. Individuals with high outcome agility produce results in difficult situations and inspire others by performing above average. Third, mental agility means the extent to which an individual is familiar with complexity, deliberately explores problems, has strong exploration, and can create new associations between different concepts. Individuals with high mental agility can think of problems from a new perspective, are accustomed to complexity and

ambiguity, and express their ideas well to others. Fourth, change agility means the extent to which an individual is receptive to change, is interested in continuous improvement, and is willing to lead activities for change. Highly agile individuals are intrigued, enthusiastic in generating ideas, and engage in activities to develop individual skills. The measurement of learning agility is mainly done by asking the learning orientation in the individual workplace or asking how much you want to use learning in a new environment or problem solving situation. As a representative study, Bedford (2011) developed a tool to measure the learning agility of high school cookies and general practitioners in the study of the relationship between learning agility and job performance and career development.

One of the notable findings of the formal researches is that people significantly show difference in the ability of their learning from the experience. This is also shown in this study. To learn, adopt, and develop oneself, one's required to step away from their original position and act upon on changing themselves to be differ from the past. The best outcome can only be taken when there is a risk, consequences, and emotionally affecting. It may be unpleasant. But as the term adopt may indicate, learners have to keep in mind that they need to be flexible on consuming new knowledge and changing upon them. One must consist a strong need for growth. Researches on learning agility shows the willingness and ability to learn from experience which separates high potentials from others.

## **B. Application of Learning Agility**

Various application of the learning agility can be seen in different organizations. For example, US military had interest in identifying and evaluating learning agile leaders. As modern military officials are required to have multiple roles, thus the quick adaptation and learning is key to guide the soldiers in different situations.

Study done by Gehler (2005) argued that to develop the agility



of the leaders, institutions must be agile to the knowledge and the trends. Specifically, he proposed that the effort put to train the agility need to be dynamic, experience-based to support not only the leadership but the agile adaptability of the learnings they acquire.

Mueller–Hanson, White, Dorsey, and Pulakos (2005) suggested for the frequent and early implementation of the training with contents on adaptive responses. They illustrated with the case of soldiers in which they should have frequent and diverse opportunities to apply what they have learned, receive feedback, and then apply it back again. Although their study concentrated more on the case of the soldiers, these kind of military's research can be applied also to the development of learning agility in diverse settings, just as in the workplace.

Due to the vast changes occurring in today's organizations and markets, adaptability, agility, and flexibility have been rose as an utmost importance to be managed for development of the performance. To be effective in today's society, leaders require to continuously learn and adapt to meet the requirements of the business world.

### **C. Learning Agility and Structured On–the–Job Training**

Although there are not many studies suggesting a direct relationship between learning agility and S–OJT, it is found that there is a close relationship with the learning S–OJT. Previous studies such as Derrue and Dries suggested a direct relationship between workplace learning or on–the–job training and learning agility. Derue presents a conceptual model of learning agility and related factors and refers to the relationship between learning agility and learning through experience in the workplace. Their study suggests that learning agility promotes learning through individual situations in the workplace, resulting in positive performance changes. In other words, agile learners not only quickly accept learning through experience, but also value learning

and engage in learning for their own growth. In the study of Dries, which examined the mediating effects of on-the-job learning on the relationship between learning agility and job performance for high-grade confectioners, the learning agility of high-confectioners and general-confectioners had a significant correlation. Specifically, there was a statistically significant correlation ( $r = 0.350$ ,  $p < 0.01$ ) between the learning agility and the on-the-job learning of high-class confectioners, and a static correlation between learning agility and field job learning ( $r = 0.510$ ,  $p < 0.01$ ). In addition, in the indirect effect of learning agility on job performance, the learning agility of core talent showed a statistically significant effect ( $\beta = 0.39$ ,  $p < 0.01$ ) on field job learning.

#### **D. The Relationship between Learning Agility and LMX**

Overall, we see a mutual agreement among the literatures on what they define as the effective leadership: leaders who are agile, versatile, flexible, and adaptive. The persons with high level of learning agility shows great and quick responses from the complex, paradoxical, and ever changing situations (Zaccaro, 2001). Such agile behavior is shown through their behavioral repertoire as the response to the demands of the situation. This unique but necessary competence is largely the foundation built from individual's job-related and life experiences. Understanding what may work and what may need in the real specified situations. Such willingness to learn and apply their learnings in their lives and create unique experiences is vital for the development of various competences for the work, leadership, and the interaction between others.

Thus it is crucial to look into not only the competency of trainer as trainer of training, but also the competency of trainee as trainee of training, as both have a grave impact on the outcome of the training as well as the progress. Thus learning agility of trainee is looked into in this study to seek the competency of the trainee and its impact on the relationship between the leader-member exchange and organizational commitment.

### **III. Research Method**

#### **1. Research Model**

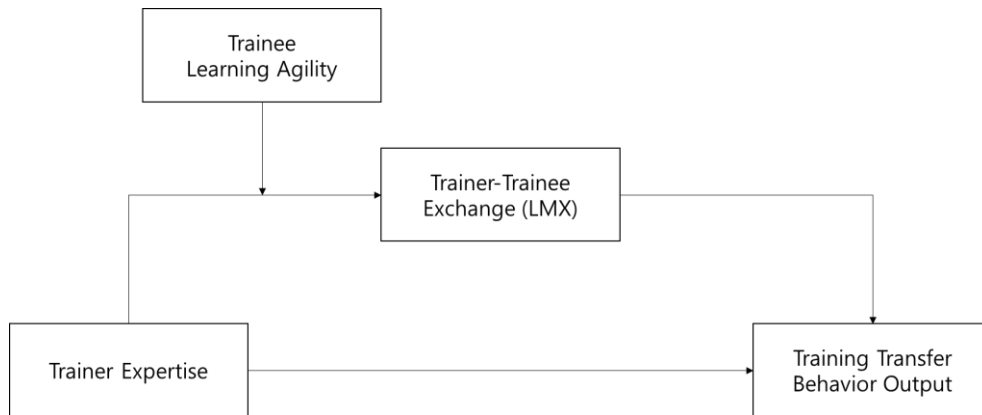
The fundamental purpose of this study was to investigate the relationship between the levels of output of transfer behavior, trainer–trainee exchange, trainee learning agility, and trainer expertise perceived by the trainees in the context of S–OJT held within Korean small and medium sized enterprises. This was look into the importance of trainer–trainee exchange within the S–OJT especially for the environment of SMEs. The design was set to look into the effect of trainees’ acknowledgement or perception on the expertise of trainer both as a fellow worker as well as a trainer. Additionally, this study seeks to observe the effect of their relationship towards the output behavior of training as it may cause different aspect of an outcome regardless to the influence of the trainer’s expertise. However, for the cases of which the agile learner may allure the decent positive relationship with the trainer with or without the high level of trainer expertise, trainees’ learning agility was set as another variable to be looked into. Thus the focus will be on the moderated mediation effect of trainer–trainee exchange with trainee learning agility as moderator on the relationship between trainer expertise and trainee’s output of transfer behavior. This, nonetheless, does not implicate to primarily seek the extent of learning agility’s impact. Instead, the study aims to see the roles of each particular variables within the model which, whether direct or indirect, will leverage the output of transfer behavior of the S–OJT trainees. Thus the research model was formed as shown in [Figure III–1]. Under the implication of the research model, trainer–trainee exchange has a moderated mediation effect on the influence of trainer expertise on trainee’s output of transfer behavior within S–OJT settings.

First, as various studies have indicated the positive effect of trainer expertise on the training transfer of the trainees in S–OJT, the study will analyze the effect of trainer expertise on the

trainees' behavior output from transfer of training. Second, although there are not much of attributional theories or backgrounds in regard to the direct connection of trainer expertise on LMX, it should be duly noted that the LMX describes a dyadic relationship occurring within an organizational context, which in this case, a workplace. Since the study done by Dienesch and Liden (1986) on the influence of leader's power and perceived organizational climate on the dyadic relationship between the leader and the subordinate, studies have discussed on the issues of the perception of subordinates on the effect that leader may bring towards the life within the organization; the potential power of the leader on the interaction between the dyadic relationship as well as a relationship with the other people in the organization. Therefore when in the context of trainer and trainee, the trainer's expertise that may affect training outcome as well as the power to assess the training outcome has part of the key role on the buildup of dyadic relationship between the trainer and the trainee. Which puts this study to look into the effect of the trainer expertise on the trainer–trainee exchange. Third, to put those perspectives in one scene, mediation effect of LMX will be looked into on the effect of trainer expertise. Forth, as various antecedents of LMX are regarding to the competencies of trainees as well as their suitability towards the leader, trainee's learning agility will be looked into as a moderator between trainer expertise and the LMX as it is vital competency for trainee in the context of training. Finally, the moderated mediation of LMX will be looked into to verify the whole model of trainer expertise, trainee learning agility, trainer–trainee exchange, and the trainee's output of transfer behavior.

As the original LMX is intended for the leader–member relationship that are not particularly focused on the training environment, the process of verification for reliability and validity of the LMX questionnaires will be held for the confirmation to use the slightly modified LMX questionnaires to have its target focused on the trainer and the trainee in accordance to its purpose. The design will look into whether the competencies of trainer and trainee as

instructor and learner will influence the capacity or direction of the effect of LMX on trainee's performance in Korean small and medium sized enterprises.



[Figure III-1] Moderated mediation model of trainer–trainee exchange (LMX) on the relationship between trainer expertise and trainee's output of transfer behavior with trainee learning agility as a moderator

## 2. Research Participants

The population of this research is all trainees participating in S-OJT activities held in Korean small to medium sized enterprises (SMEs). However, as there are no specified statistical report on the S-OJT held in SMEs as well as the evaluations of it, thus target population has been set to specify the size of the population.

Most of the literatures that specified their population of study into the Korean SMEs participating in S-OJT activities had their target population as the companies that are participating in the 'S-OJT Support Program for SMEs' provided by Korean Ministry of Employment and Labor and Human Resources Development Service of Korea (HRD Korea). This was due to the lack of data that illustrates the SMEs that use S-OJT as part of their methods for training. Although initially this study intended to have the target population as the SMEs participating in the 'S-OJT Support Program for SMEs', such was unable to be settled as the personnel from the HRD Korea stated that with the possible closure of the

program, the information on participating companies cannot be shared. However, ‘Work and Learning Dual System’ program was suggested as it has S-OJT as a part of the program.

Therefore, the target population of this research contains trainees of S-OJT activities held in SMEs that have participated in the ‘Work and Learning Dual System’ program funded and operated by Ministry of Employment of Labor and Human Resources Development Service of Korea. The total amount of trainees in the program is 36,426 with total enterprises of 9,007. The qualification to apply for ‘Work and Learning Dual System’ program is as follows: the enterprise needs to have at least 50 employees working on the scene with jobs that were analyzed through National Competency Standard (NCS) of Korea. Further information in regard to the SMEs participating in the program will be clarified as the study progresses.

As the ground notion on the field of social sciences, the research will be depicted as having a reliable sample if it exceeds 300 people as the number of participants for the survey. For the precision of assumption and standard deviation, the number of samples needs to be considered, and generally the data collection should at least contain 3 employees from more than 30 enterprises (Klein & Kozlowski, 2000). However, to satisfy the representativeness of target population with sample, more collections from enterprises may be required. As the target population is 36,426, the sample to represent such population will therefore be 382 or more (Krejcie & Morgan, 1970). With the average participating trainees per enterprises are 4, data collection should be held from at least 93 enterprises.

This research will take data analysis method, sample size equation, ratio on survey retraction and valid responses, etc. into consideration when deciding sample size. Larger sampling compared to the actual sample size will be conducted to reduce the possibility of having negative effect caused by the invalid or non-responses of the survey. Random sampling will be held for clear reflection of the data on the results that the research is looking for.

### **3. Instrumentation of the Research**

Various tools has been utilized to create survey questionnaire that suites the needs of this research. Survey questionnaire contains questions regarding to the individual and job characteristics and the variables of the model: output of transfer behavior, trainer–trainee exchange, trainer expertise, and trainee learning agility perceived by trainees of S–OJT (see <Table III–1>). 5 point Likert –scale was used for all of the variables, and the items were selected based on the literature reviews. Total 36 items were selected, including 6 items of output of transfer behavior, 7 items of trainer–trainee exchange, 9 items of trainer expertise, 9 items of trainee learning agility, and 5 items of general information.

To verify the contents of the instrument of the research and to see if the wordings of the questionnaires are easily understandable for the people who may not have much acknowledgements on the issues of each variables, two Ph.D. graduates specializing in HRD, one Ph.D. graduate with expertise on Korean language and literature, one HR manager in SME, and one ‘Work and Learning Dual System’ program participating trainee have reviewed thoroughly. Few wordings were simplified to fit the perspectives and understandings of the participating trainees. Additionally, with the pilot test on 56 participants that was held during March 20<sup>th</sup> to March 27<sup>th</sup>, 2017, validity and reliability of the instrument has been checked. For the reliability test, Cronbach’s Alpha was calculated for the items to seek the reliability level of the whole instrument. For the construct validity, explorative factor analysis was done for each of the instruments followed by the confirmative factor. Although explorative factor analysis is not necessary for the tools that were utilized by various scholars in different studies, it is still helpful for the cases where the items were modified to fit the target population, or the related studies have not clearly shown the consensus of the constructs for the specified tool of each variables. Thus, both SPSS 24.0 and AMOS was both utilized for the validity and reliability tests.

<Table III-1> Research Instrumentation

Tools	Primary Scholar	Construct	Number of Items	Item No. for the Study	Measurement
Output of Transfer Behavior	Xiao (1996)	Output of Transfer Behavior	6	I. 1~6	5 point Likert scale
Trainer–Trainee Exchange	Graen & Uhl–Bien (1995)	Mutual Respect for the Capabilities of the Other	7	II. 1~7	
		Anticipation of Deepening Reciprocal Trust with the Other			
		Expectation that Interaction Obligation will Grow			
Trainer Expertise	Choi, Lee, & Jacobs (2015)	Work Expertise	9	III. 1~9	
		Training Expertise			
Trainee Learning Agility	Bedford (2011)	Learning Agility	9	IV. 1~9	
General Information	–	–	5	V. 1~5	
Total Items			36	–	



## A) Output of Transfer Behavior

Output of transfer behavior refers to the measure taken after the training process by the trainees to reflect the improvement that was caused by the training. It seeks for the act, or the self-aware of the transfer of training onto the workplace to achieve performance improvement. Thus this study has utilized the questionnaire developed by Xiao (1996) to identify the output of transfer behavior from training. In this study, it is focused on the behavioral output from the transfer of training through S-OJT held within the 'Work and Learning Dual System' program. Therefore, such questionnaires are formed with questions in regards to the improvement in the work performance due to the application of knowledge and skills learned from the S-OJT practices.

Although other instruments, such as Learning Transfer System Inventory developed by Holton III, Bates, & Ruona (2000), are as well effective to show the impact of training on the transfer of knowledge, skill, and attitude on the workplace, it consists 68 items along with various constructs that concentrates on the motivations, preparedness, and others, being irrelevant to the exact output of the training (see <Table III-2>).

As the participants of the 'Work and Learning Dual System' program consists people with education degrees lower than high school graduates, the questionnaires were revised to form the questions easier to understand for non-experts in HRD sector. Therefore along with the content validity, two Ph.D. graduates specialized in HRD and one Ph.D. graduate with expertise on Korean language and literature helped on slight modifications. To test for construct validity, confirmatory factor analysis has been done with the Varimax orthogonal rotation for simplification of factor loading (see <Table III-3>). KMO measure and significance from Bartlett's test of sphericity is shown for adequacy of sample and factor analysis.

As shown in <Table III-3>, factor analysis was done for 6 items of Output of Transfer Behavior.

<Table III–2> Related Tools on Training Transfer Behavior

Tools	Major Scholar	Construct	Number of Items	Cronbach's alpha	Related Literatures
Output of Transfer Behavior	Xiao (1996)	Output of Transfer Behavior	6	.83	Scaduto et al. (2008); Wen & Lin (2014)
Learning Transfer System Inventory	Holton III, Bates, & Ruona (2000)	Learner readiness	68	.73	Jung (2009); Bates, Holton III, & Hatala (2012)
		Motivation to transfer		.83	
		Positive personal outcomes		.69	
		Negative personal outcomes		.76	
		Personal capacity for transfer		.68	
		Peer support		.83	
		Supervisor support		.91	
		Supervisor sanctions		.63	
		Perceived content validity		.84	
		Transfer design		.85	
		Opportunity to use		.70	
		Transfer effort–performance expectations		.81	
		Performance–outcomes expectations		.83	
		Resistance–openness to change		.85	
		Performance self–efficacy		.76	
		Performance coaching		.70	

The analysis resulted with 4 items on ‘General Perspectives on the Improvements of the Performance Outcome through Training’, 1 item on ‘Actual Experience of Improvement on Work Efficiency after Training’, and 1 item on ‘Decrease of Mistakes through Training’. The rotated component matrix had minimum of .732 to the maximum of .908, exceeding the recommended value of .4 to show its decency.

<Table III–3> Factor Analysis Result on the Measure of Output of Transfer Behavior

Construct	Items	Factor 1	Factor 2	Factor 3
General Perspectives on the Improvements of the Performance Outcome through Training	1	.773	.428	.350
	2	.732	.481	.201
	4	.840	.135	.488
	5	.854	.236	.232
Actual Experience of Improvement on Work Efficiency after Training	3	.277	.908	.264
Decrease of Mistakes through Training	6	.367	.320	.867
Total Eigenvalue		2.779	1.415	1.275
% of Variance		46.311	23.585	21.254
Cumulative %		46.311	69.896	91.150
KMO & Bartlett’s Test		KMO .756, Bartlett Sig. .000		

Eigenvalue of each factors were 2.779, 1.415, and 1.275 accordingly with 91.150% of total explanatory power. KMO measure was .756 which exceeds the recommendation measure of .7 while having its significance within .01 level to be suitable for factor analysis. Additionally, reliability test was conducted for the Output of Transfer Behavior, which resulted high degree of Cronbach's Alpha, .929 (see <Table III-4>).

**<Table III-4> Reliability Test Result on the Research Instrument of Output of Transfer Behavior**

Construct	No. of Items	Pilot Survey (n=56) Cronbach's Alpha	Main Survey (n=383) Cronbach's Alpha
Output of Transfer Behavior	6	.881	.929
General Perspectives on the Improvements of the Performance Outcome through Training	4	.921	.934
Actual Experience of Improvement on Work Efficiency after Training	1	—	—
Decrease of Mistakes through Training	1	—	—

### **B) Trainer–Trainee Exchange (LMX)**

There are diverse measurement tools for measuring leader–member exchange (LMX), but two tools are genuinely used in vast number of studies on LMX. Tool developed by Liden & Maslyn (1994) is based on the position held by Dienesch & Liden (1986) of which LMX is multidimensional, with the dimensions identified as perceived contribution, loyalty, and affect. Thus it consists four factors to illustrate LMX, and is often referred to as LMX MDM questionnaire.

However, unlike the view of Dienesch & Liden (1986) and the followed studies that are consistent with the view (Phillips, Duran, & Howell, 1993; Liden, 1993; Liden & Maslyn, 1994), Graen & Uhl-Bien (1995) has presented alternate measures of LMX into 7 questionnaires, referred to as LMX-7. This is based on the result of the testing done by Graen & Uhl-Bein (1995) of which found high correlation between the dimensions of LMX construct. Thus the uniting into singular measure was concluded (see <Table III-5>).

Therefore, LMX-7 questionnaires was to be used for this research with 5 point Likert scale. Validity and reliability tests were most important for this research instrument as the target population has shifted from the leader and the member to the trainer and trainee. Although most of the participants were in the frame of leader and the subordinate, it was crucial to acknowledge that the questionnaires limited the target into the relationship as the one who trains and the one who receives training. This also was another reason to utilize LMX-7 instead of LMX MDM as constructs such as loyalty may not be as much applicable in the context of trainer and trainee.

<Table III-5> Related Tools on Trainer-trainee exchange

Tools	Major Scholar	Construct	Number of Items	Cronbach's alpha	Related Literatures
LMX-7	Graen & Uhl-Bein (1995)	Leader-member exchange	7	.87	Truckenbrodt (2000); Scandura & Schriesheim (1994)
LMX MDM	Liden & Maslyn (1998)	Affect	11	.83	Liden & Maslyn (1994); Dienesch & Liden (1986)
		Loyalty		.66	
		Contribution		.56	
		Professional Respect		.79	

Along with the content validity, two Ph.D. graduates specialized in HRD, one Ph.D. graduate with expertise on Korean language and literature, and one participant of the program have helped on slight modifications to fit the target population. To test for construct validity, confirmatory factor analysis has been done with the Varimax orthogonal rotation for simplification of factor loading (see <Table III-6>). KMO measure and significance from Bartlett's test of sphericity is shown for adequacy of sample and factor analysis.

**<Table III-6> Factor Analysis Result on the Measure of Trainer-Trainee Exchange**

Construct	Items	Factor 1	Factor 2	Factor 3
Mutual Respect for the Capabilities of the Other	1	.925	.324	.158
	2	.948	.284	.060
	3	.933	.273	.181
Anticipation of Deepening Reciprocal Trust with the Other	4	.283	.930	.109
	5	.290	.927	.111
	6	.290	.897	.154
Expectation that Interacting Obligation will Grow	7	.451	.442	.600
Total Eigenvalue		3.325	2.982	.462
% of Variance		47.507	42.600	6.596
Cumulative %		47.507	90.107	96.702
KMO & Bartlett's Test		KMO .871, Bartlett Sig. .000		

As shown in <Table III–6>, factor analysis was done for 6 items of Trainer–Trainee Exchange. The analysis resulted with 3 items on ‘Mutual Respect for the Capabilities of the Other’, 3 items on ‘Anticipation of Deepening Reciprocal Trust with the Other’, and 1 item on ‘Expectation that Interacting Obligation will Grow’. The rotated component matrix had minimum of .600 to the maximum of .948, exceeding the recommended value of .4 to show its decency.

Eigenvalue of each factors were 3.325, 2.982, and .462 accordingly with 96.702% of total explanatory power. KMO measure was .871 which exceeds the recommendation measure of .7 while having its significance within .01 level to be suitable for factor analysis. Additionally, reliability test was conducted for the Trainer–Trainee Exchange, which resulted high degree of Cronbach’s Alpha, .947 (see <Table III–7>).

**<Table III–7> Reliability Test Result on the Research Instrument of Trainer–Trainee Exchange**

Construct	No. of Items	Pilot Survey (n=56) Cronbach’s Alpha	Main Survey (n=383) Cronbach’s Alpha
Trainer–Trainee Exchange	7	.884	.947
Mutual Respect for the Capabilities of the Other	3	.792	.989
Anticipation of Deepening Reciprocal Trust with the Other	3	.898	.968
Expectation that Interacting Obligation will Grow	1	–	–

### C) Trainer Expertise

Based on the various literature reviews on trainer expertise and competency for S-OJT, Choi, Lee, & Jacobs (2015) have constructed items to measure trainer expertise within S-OJT context. As it identified trainer expertise as the expert knowledge, skill, experience, and problem-solving skills required for planning, implementing, and evaluating S-OJT activities as a trainer, this study follows Choi, Lee, & Jacobs's (2015) study and use 6 item questionnaire to measure work and training expertise as a trainer expertise for S-OJT. 5 Likert scale was used, identical to the scale measurement done by Choi, Lee, & Jacobs (2015) (see <Table III-8>).

<Table III-8> Research Instrument for Trainer Expertise

Tools	Major Scholar	Construct	Number of Items	Cronbach's alpha	Related Literatures
Trainer Expertise	Choi, Lee, & Jacobs (2015)	Work Expertise	9	.92	Lee, Choi, & Paek (2013), Jacobs (2003)
		Training Expertise			

Although the population of the tool designed by Choi, Lee & Jacobs (2015) was in accordance to this study, aiming for participants of S-OJT held in Korean SMEs, exploratory factor analysis was still conducted as the tool was not been widely used due to its recency. To test for construct validity, confirmatory factor analysis has been done with the Varimax orthogonal rotation for simplification of factor loading (see <Table III-9>). KMO measure and significance from Bartlett's test of sphericity is shown for adequacy of sample and factor analysis.



<Table III–9> Factor Analysis Result on the Measure of Trainer Expertise

Construct	Items	Factor 1	Factor 2
Work Expertise	1	.302	.917
	2	.234	.915
	3	.243	.940
Training Expertise	4	.901	.209
	5	.899	.267
	6	.912	.237
	7	.885	.254
	8	.903	.280
	9	.831	.249
Total Eigenvalue		4.947	2.939
% of Variance		54.965	32.658
Cumulative %		54.965	87.624
KMO & Bartlett's Test		KMO .879, Bartlett Sig. .000	

As shown in <Table III–9>, factor analysis was done for 9 items of Trainer Expertise. The analysis resulted with 3 items on ‘Training Expertise’, and 3 items on ‘Work Expertise’. The rotated component matrix had minimum of .831 to the maximum of .940, exceeding the recommended value of .4 to show its decency.

Eigenvalue of each factors were 4.947, and 2.939 accordingly with 87.624% of total explanatory power. KMO measure was .867 which exceeds the recommendation measure of .7 while having its significance within .01 level to be suitable for factor analysis. Additionally, reliability test was conducted for the Trainer Expertise, which resulted high degree of Cronbach’s Alpha, .941 (see <Table III–10>).

<Table III–10> Reliability Test Result on the Research Instrument of Trainer Expertise

Construct	No. of Items	Pilot Survey (n=56) Cronbach's Alpha	Main Survey (n=383) Cronbach's Alpha
Trainer Expertise	9	.838	.941
Work Expertise	3	.829	.958
Training Expertise	6	.826	.964

#### D) Learning Agility

Throughout the various literature reviews on trainee's learning agility in the context of S–OJT, Choi, Lee, & Jacobs (2015) have constructed items to measure trainee's learning agility within S–OJT context. The study has modified the research instrument designed by Bedford (2011) to measure learning agility of employees in small and medium sized enterprises (see <Table III–11>). It is formed with nine questionnaires with 5 Likert scale. In the study held by Bedford (2011), factor loading was .47( $p < .01$ ), showing low possibility of consisting problems to the concentration between concepts as well as discriminant validity. Cronbach's alpha was .929, showing its high reliability. Each questionnaires has been modified to fit in the settings of workplace, with focuses on individual's work within their job duties.

<Table III–11> Tool for Trainee Learning Agility

Tools	Major Scholar	Construct	Number of Items	Cronbach's alpha	Related Literatures
Learning Agility	Bedford (2011)	Learning Agility	9	.929	Choi, Lee, & Jacobs (2015); Derue, Ashford, & Myers (2012)

Along with the content validity, two Ph.D. graduates specialized in HRD, one Ph.D. graduate with expertise on Korean language and literature, and one participant of the program have helped on slight modifications to fit the target population.

<Table III–12> Factor Analysis Result on the Measure of Learning Agility

Construct	Items	Factor 1	Factor 2	Factor 3
Development through Reflection and Feedback	2	.674	.209	.000
	3	.597	.351	.266
	4	.830	.157	–.087
	6	.741	.180	.267
	7	.732	.194	.041
Seeking for New Knowledge	1	.397	.590	.285
	5	.147	.882	–.059
	9	.272	.842	.009
Open–Mindedness	8	.059	.006	.946
Total Eigenvalue		2.841	2.096	1.130
% of Variance		31.571	23.293	12.557
Cumulative %		31.571	54.864	67.421
KMO & Bartlett’s Test		KMO .747, Bartlett Sig. .000		

To test for construct validity, confirmatory factor analysis has been done with the Varimax orthogonal rotation for simplification of factor loading (see <Table III–12>). KMO measure and significance from Bartlett’s test of sphericity is shown for adequacy of sample and factor analysis.

As shown in <Table III–12>, factor analysis was done for 9 items of Trainee Learning Agility. The analysis resulted with 5 items on ‘Development through Reflection & Feedback’, 3 items on ‘Seeking for New Knowledge’, and 1 item on ‘Open–Mindedness’. The rotated component matrix had minimum of .590 to the maximum of .946, exceeding the recommended value of .4 to show its decency.

Eigenvalue of each factors were 2.841, 2.096, and 1.130 accordingly with 67.421% of total explanatory power. KMO measure was .747 which exceeds the recommendation measure of .7 while having its significance within .01 level to be suitable for factor analysis. Additionally, reliability test was conducted for the Trainer Expertise, which resulted high degree of Cronbach’s Alpha, .830 (see <Table III–13>).

**<Table III–13> Reliability Test Result on the Research Instrument of Learning Agility**

Construct	No. of Items	Pilot Survey (n=56) Cronbach’s Alpha	Main Survey (n=383) Cronbach’s Alpha
Learning Agility	9	.861	.830
Development through Reflection & Feedback	5	.845	.813
Seeking for New Knowledge	3	.754	.765
Open–Mindedness	1	–	–

### E) Confirmative Factor Analysis and the Convergent, Discriminant Validity Tests

Validity tests were held for the research instrument of this study. To test the convergent validity and discriminant validity, confirmative factor analysis has been done. Under the test standard suggested by Fornell & Larcker (1981) and Hair et al. (1987), the validity for each concept of constructs were verified.

To seek if each of the items were constructed to explain the concept of the research instruments, standardized factor loading ( $\beta$ ), average variance extract (AVE), and composite reliability (C.R.) were extracted for the convergent validity. Generally, factor loadings need to be statistically significant and AVE needs to be over .5 (Hair et al., 1987) while C.R. is higher than .7 to state that convergent validity was secured (Fornell & Larcker, 1981).

As a result, all factor loadings were higher than the suggested standard of .5 as illustred in <Table III-14>. Also, AVE and C.R. were both higher than .5 and .7 accordingly to pass the validity test. Cronbach's alpha were higher than .6 to safely say that the convergent validity of the research instrument was verified.

Discriminant validity is a process that verifies the independency of the variables within the research model. As variables measure different types of subjects based upon various items, it is necessary to seek the independency of the variables. To secure the discriminant validity, the correlation between the different concepts need to be low. For this study, AVE was used to analyze discriminant validity as suggested by Fornell & Larcker (1981). The root of AVE needs to be same or higher than .7 and it needs to be bigger than the correlations between variables to safely say that the discriminant validity was secured.

<Table III–14> Convergent Validity Test Result

Variables	Factors	Factor Loadings	AVE	C.R.	Cronbach's Alpha
Output of Transfer Behavior	General Perspectives on the Improvements of the Performance Outcome through Training	.874	.753	.846	.929
	Actual Experience of Improvement on Work Efficiency after Training	.918			
	Decrease of Mistakes through Training	.889			
Trainer – Trainee Exchange	Mutual Respect for the Capabilities of the Other	.890	.748	.890	.947
	Anticipation of Deepening Reciprocal Trust with the Other	.929			
	Expectation that Interacting Obligation will Grow	.765			
Trainer Expertise	Work Expertise	.963	.596	.686	.941
	Training Expertise	.963			
Learning Agility	Development through Reflection & Feedback	.954	.395	.603	.830
	Seeking for New Knowledge	.949			
	Open – Mindedness	.996			

<Table III–15> Discriminant Validity Test Result

Variables	Output of Transfer Behavior	Trainer–Trainee Exchange	Trainer Expertise	Learning Agility
Output of Transfer Behavior	.868			
Trainer–Trainee Exchange	.860**	.865		
Trainer Expertise	.744**	.770**	.772	
Learning Agility	.592**	.608**	.517**	.628

Colored sections are root of AVE (\*\* Correlation is significant at the .01 level)

Based on the result of the analysis shown in <Table III–15>, the colored sections with the root of AVE were all higher than .7 while have correlations lower than the root of AVE. This illustrates that the research instrument is satisfying the standard of discriminant validity. Thus it is safe to say that the research instruments utilized in this study were conceptually valid.

#### 4. Data Collection Procedures

To verify the validity and reliability of research instrument before the main survey, data collection were held with pre–survey. Based on the data collection and analysis of the pre–survey, questionnaires will be revised to complete the main survey.

Data were collected for the pilot test during the March 20<sup>th</sup> to March 27<sup>th</sup>, 2017. This was done through email and online surveys. 58 participants' data were collected. After neglecting two outliers, 56 participants' data were used for the reliability and validity tests on the pilot test. After the reliability and validity tests done with the data collected through pre–survey, main survey was continued.

Both pre and main surveys were distributed to the participants of S-OJT in SMEs that are supported by the ‘Work and Learning Dual System’ program. Main survey was done from March 28<sup>th</sup> to April 21<sup>st</sup>, 2017. 390 participants responded the survey through email and online distribution of the survey, and 7 data were discarded as outliers. Therefore, total of 383 data were used for the study, which is suitable to be a representing a target population of 36,426 (Krejcie & Morgan, 1970). Characteristics on the collection of data will be analyzed and presented for basic statistical information. Additional statistical analysis for the research purpose will be held as well.

## **5. Data Analysis**

The data collected by this study will be analyzed through up-to-date Windows SPSS version, a statistical package. All of the analyses will have its level of significance set to 5%. Major statistical methods are frequency, percentage, average, and standard deviation, for the descriptive statistics. To clarify the relationship between the variables, correlation analysis and regression analysis will be utilized. Also, for analyzing moderating effects of each moderators, hierarchical multiple regression analysis will be held based on the moderator model framework proposed by Baron & Kenny (1986). Statistical methods that will be used for this study are illustrated in the <Table III-16>.

To secure predictory statistical power in hierarchical multiple regression analysis, dependent variable requires to be numerical that follows normal distribution, while satisfying homoscedasticity and mutual exclusivity. Assumptions of normality can be verified through P-P plot, where if the dots are placed on the 45° line, it is safe to assume that it generally follows the normal distribution. Homoscedasticity can be checked through scatter plot of residuals, and when the data are spread fairly with 0 as a center, it is safe to assume that it meets the standard for homoscedasticity. Mutual exclusivity can be evaluated with Dubrin-Watson’s statistics, of



which it can be interpreted to have mutual exclusivity when statistics posit near 2.

Thus this study will contain total of three multiple regression analyses to see the effect of LMX on the trainee's performance, the moderated mediation of LMX on the relationship between trainer expertise and trainee's performance, and the moderating effect of trainee learning agility in the relationship between LMX and trainer expertise.

<Table III-16> Statistical Methods for Specific Research Questions

Research Questions	Statistical Methods
General characteristics of respondents	Frequency, Percentage
Q-1. What are the level of trainer expertise, trainee learning agility, trainer-trainee exchange (LMX), and trainee's output of transfer behavior within the S-OJT settings of SMEs?	Average, Standard Deviation
Q-2. What are the correlations of trainer expertise, trainee learning agility, trainer-trainee exchange (LMX), and trainee's output of transfer behavior within the S-OJT settings of SMEs?	Correlation Analysis
Q-3. Is there a significant effect of trainer expertise on trainer-trainee exchange (LMX) and trainee's output of transfer behavior within the S-OJT settings of SMEs?	Hierarchical Multiple Regression Analysis
Q-4. Is there a mediating effect of trainer-trainee exchange on the relationship between trainer expertise and trainee's output of transfer behavior within the S-OJT settings of SMEs?	Hierarchical Multiple Regression Analysis (Analysis of Mediating Variable)
Q-5. Is there a moderating effect of trainee learning agility on the relationship between trainer expertise and trainer-trainee exchange within the S-OJT settings of SMEs?	Hierarchical Multiple Regression Analysis (Analysis of Moderating Variable)
Q-6. Is there a mediated moderation effect of trainer-trainee exchange (LMX) on the relationship of interaction between trainer expertise, trainee learning agility, and trainee's output of transfer behavior within the S-OJT settings of SMEs?	Hierarchical Multiple Regression Analysis, Analysis for Conditional Indirect Effect

## **IV. Results**

### **1. General Characteristics**

As noted beforehand, total of 383 collected data were used for the study. It means that the valid return of questionnaire was 98% based on the total collected data of 390. To see the general characteristics of the research participants, frequencies and percentages of several characteristics were measured as shown in <Table IV-1>. For the gender, males were consisting 81.7% (313 participants) while females were consisting 18.3% (70 participants), showing more participation of the males for the survey. This reflects the actual percentage of the participants of the project, of which is formed with 83.8% of male and 16.2% of female in total based on the statistics of 2014, 2015, and up to July of 2016. For the age differences, participants less than age of 20 were 31.9% (122 participants), 20-24 were 22.2% (85 participants), 25-29 were 24.0% (92 participants), 30-34 were 10.4% (40 participants), 35-39 were 4.4% (17 participants), 40-44 were 2.9% (11 participants), 45-49 were 2.3 % (9 participants), and over 50 were 1.8% (7 participants). Most of the participants were under the age of 20. For the level of education, participants who were high school graduates or under consisted 49.3 % (189 participants), while community college graduates consisted 17.8% (68 participants), university graduates consisted 31.3% (120 participants), and graduate school or over consisted 1.6% (6 participants). Most of the participants were either high school graduates or university graduates. In the case of industries, participants in office management were 17.2% (66 participants), professionals were 39.9% (153 participants), productions were 7.8% (30 participants), service were 8.6% (33 participants), and others were 26.4% (101 participants). The duration of the total training program participated by trainees varies mostly either less than a year, a year or two, or more than three years. Participants who took less than a year were 31.3% (120 participants), 1-2 years were 58.2% (223

participants), and 10.4% (40 participants) for those who took more than 3 years. Most of them took less than 2 years.

<Table IV–1> General Characteristics of Research Participants

Categories		Frequency (Number of People)	Percentage (%)
Gender	Male	313	81.7
	Female	70	18.3
Age	Less than 20	122	31.9
	20–24	85	22.2
	25–29	92	24.0
	30–34	40	10.4
	35–39	17	4.4
	40–44	11	2.9
	45–49	9	2.3
	Over 50	7	1.8
Education	High School Grad and Under	189	49.3
	Community College Grad	68	17.8
	College(Univ.) Grad	120	31.3
	Graduate School and Over	6	1.6
Industry	Office Management	66	17.2
	Professional	153	39.9
	Production	30	7.8
	Service	33	8.6
	Others	101	26.4
Duration	Less than 1 Year	120	31.3
	1–2 Years	223	58.2
	More than 3 Years	40	10.4
Total		383	100

## 2. Measured Data of Variables

To check the research question of “What are the levels of output of transfer behavior, trainer–trainee exchange, trainer expertise, and trainee learning agility perceived by the trainees of S–OJT held in Korean small and medium sized enterprises?”, descriptive analysis was done to seek the levels of each variables. Such result is illustrated in the <Table IV–2>. All research instruments were measured in 5 point Likert scale, with total of 31 items to measure the variables. The mean of the output of transfer behavior was 3.74 with standard deviation of .72, minimum of 2.50 and maximum of 5.00. Trainer–trainee exchange had mean of 3.35, standard deviation of .90, minimum of 1.71, and maximum of 4.57. Trainer expertise consisted mean of 3.48, standard deviation of .63, minimum of 2.00, and maximum of 5.00. Trainee learning agility had mean of 3.95 with standard deviation of .33, minimum of 3.00, and maximum of 5.00. Overall, the mean score was within the range of 3.35 to 3.95, with trainee learning agility as the highest (3.95) and the trainer–trainee exchange as the lowest (3.35). Still, in average, all of the variables had its mean exceeding neutral (3). Based on the results of standard deviation, it can be seen that unlike other variables, trainee learning agility has low standard deviation ( $s=.33$ ) which indicates that the self–perceived learning agility by trainees are generally indifferent between the people, with most of the people scoring in average around 4 (agree). This means that many participants in average have given themselves high scores in their learning agility

<Table IV–2> Level of Output of Transfer Behavior, Trainer–Trainee Exchange, Trainer Expertise, and Trainee Learning Agility

Variables	Sub–variables	Mean	SD	Minimum	Maximum
Output of Transfer Behavior	Total	3.74	.72	2.50	5.00
	General Perspectives on the Improvements of the Performance Outcome through Training	3.65	.789	2.00	5.00
	Actual Experience of Improvement on Work Efficiency after Training	3.90	.62	2	5
	Decrease of Mistakes through Training	3.95	.93	2	5
Trainer–Trainee Exchange	Total	3.52	.86	1.57	4.57
	Mutual Respect for the Capabilities of the Other	3.58	1.05	1.00	5.00
	Anticipation of Deepening Reciprocal Trust with the Other	3.36	.89	1.00	5.00
	Expectation that Interacting Obligation will Grow	3.86	.904	2	5
Trainer Expertise	Total	3.55	.76	1.78	5.00
	Work Expertise	4.03	.55	2.33	5.00
	Training Expertise	3.31	.97	1.17	5.00
Trainee Learning Agility	Total	3.91	.52	2.78	5.00
	Development through Reflection & Feedback	3.89	.48	2.67	5.00
	Seeking for New Knowledge	3.90	.49	2.60	5.00
	Open–Mindedness	4.08	.51	2.00	5.00

### 3. Difference of the Output of Transfer Behavior based on the General Characteristics

To check the research question of “Is there any difference in the output of transfer behavior based on the general characteristics of participants in S-OJT held by Korean SMEs?”, differences in mean of output of transfer behavior was analyzed for the age, education, industry, and training duration. One-way ANOVA was used for the F test so that variables that has significant difference will be settled as control variables.

First, to see if there is a difference in the output of transfer behavior based on the gender, F test was held, however, the result was statistically insignificant. The result is shown in <Table IV-3>.

**<Table IV-3> Result of F test on the level of Output of Transfer Behavior based on the difference of Gender**

Variable	Gender	N	Mean	SD	F
Output of Transfer Behavior	Male	313	3.76	.71	1.378
	Female	70	3.65	.75	

Second, to see if there is a difference in the output of transfer behavior based on the age, F test was held, however, the result was statistically insignificant. The result is shown in <Table IV-4>.

**<Table IV-4> Result of F test on the level of Output of Transfer Behavior based on the difference of Age**

Variable	Age	N	Mean	SD	F
Output of Transfer Behavior	Less than 20	122	3.65	.79	1.398
	20-24	85	3.78	.69	
	25-29	92	3.73	.72	
	30-34	40	3.79	.688	
	35-39	17	3.72	.68	
	40-44	11	3.79	.48	
	45-49	9	4.11	.34	
	Over 50	7	4.33	.46	

Third, to see if there is a difference in the output of transfer behavior based on the education, F test was held, however, the result was statistically insignificant. The result is shown in <Table IV-5>.

**<Table IV-5> Result of F test on the level of Output of Transfer Behavior based on the difference of Education**

Variable	Education	N	Mean	SD	F
Output of Transfer Behavior	High School Grad and Under	189	3.72	.77	.622
	Community College Grad	68	3.82	.72	
	University Grad	120	3.73	.65	
	Graduate School and Over	6	4.00	.00	

Fourth, to see if there is a difference in the output of transfer behavior based on the industry, F test was held, however, the result was statistically insignificant. The result is shown in <Table IV-6>.

**<Table IV-6> Result of F test on the level of Output of Transfer Behavior based on the difference of Industry**

Variable	Industry	N	Mean	SD	F
Output of Transfer Behavior	Office Management	66	3.76	.67	1.544
	Professional	153	3.80	.70	
	Production	30	3.51	.83	
	Service	33	3.57	.84	
	Others	101	3.77	.71	

Fourth, to see if there is a difference in the output of transfer behavior based on the duration of the program, F test was held, however, the result was statistically insignificant. The result is shown in <Table IV-7>.

<Table IV–7> Result of F test on the level of Output of Transfer Behavior based on the difference of program Duration

Variable	Duration	N	Mean	SD	F
Output of Transfer Behavior	Less than 1 Year	120	3.71	.72	.283
	1–2 Years	223	3.75	.74	
	More than 3 Years	40	3.80	.61	

#### 4. Correlation between the Variables

Result of the correlation analysis between the variables of output of transfer behavior, trainer–trainee exchange, trainer expertise, and trainee learning agility is illustrated in the <Table IV–8>. For the correlation between the variables, including the dependent variable (output of transfer behavior), independent variable (trainer expertise), moderating variable (trainee learning agility), and the moderated mediation variable (trainer–trainee exchange), the correlations were statistically significant with the  $p$ -value<.001 except between the trainee learning agility and the trainer–trainee exchange. Excluding the relation between the moderating variable of trainee learning agility and the moderated mediation variable of trainer–trainee exchange, every variables showed positive correlation between each other variables. In the case of the dependent variable of output of transfer behavior, mediating variable (trainer–trainee exchange), independent variable (trainer expertise), and moderating variable (trainee learning agility) have positive correlation of  $r=.825$ ,  $.751$ , and  $.344$  accordingly. It is evident that the mediating variable had the highest positive correlation with the dependent variable with moderating variable having the lowest positive correlation.



<Table IV–8> Correlation between variables

Categories	1	2	3	4	5	6	7	8	9
1. Gender	1								
2. Age	.007	1							
3. Education	−.026	.604**	1						
4. Industry	−.045	−.281**	−.378**	1					
5. Duration	−.004	.056	.000	.010	1				
6. Output of Transfer Behavior	−.060	.124*	.028	−.026	.039	1			
7. Trainer–Trainee Exchange	−.137**	.132**	.056	−.053	.042	.860**	1		
8. Trainer Expertise	.036	.206**	.057	−.065	−.025	.744**	.770**	1	
9. Trainee Learning Agility	−.045	.100	.106*	−.075	−.004	.592**	.608**	.517**	1

\*\* . Correlation is significant at the .01 level.

\* . Correlation is significant at the .05 level.

## 5. Relationship between Output of Transfer Behavior and Trainer Expertise

To look into the research question “Is there a direct effect of trainer expertise on the trainee’s output of transfer behavior?” linear regression analysis was exercised. The result is shown in <Table IV–9>. As none of the general characteristics were resulted to be statistically significant to become the control variables, multiple regression analysis was not necessary to seek the single relationship between the two variables.

<Table IV–9> Linear Regression Analysis of Trainer Expertise for Output of Transfer Behavior

Model	$\beta$	t	$R^2$ ( <i>adj</i> $R^2$ )	F
Trainer Expertise → Output of Transfer Behavior	.744***	21.722***	.553(.552)	471.85***

Note: \*p<.05, \*\*p<.01, \*\*\*p<.001

Dependent and independent variables were plugged into the linear regression analysis to seek for the relationship between the two. As the result, F score was 471.85 within the significance level of .001 to make the direct effect model be statistically plausible. Explanatory power ( $R^2$ ) was .553, showing high level of explanatory power. Overall, it was evident to see that the trainer expertise had statistically significant direct positive effect on the output of transfer behavior of trainees participating in S–OJT held within Korean SMEs.

## 6. Mediation of Trainer-Trainee Exchange

To verify the research question of “Is there a mediation effect of trainer–trainee exchange in the relationship between trainer expertise and output of transfer behavior?”, hierarchical regression

analysis was processed based on the illustrations by Baron & Kenny (1986). The analysis for the mediation effect is held with three steps if it's done by the hierarchical regression analysis: 1) look into the effect of independent variable to the mediator, 2) look into the effect of independent variable to the dependent variable, and 3) look into the effect of independent variable and the mediator to the dependent variable. If the direct effect of independent variable toward dependent variable disappears, it is acknowledged as the complete mediating effect of trainer–trainee exchange. However, if the value stays but decreases, it is explained as partial mediating effect. <Table IV–10> shows the analysis of the mediating effect.

**<Table IV–10> Hierarchical Multiple Regression Analysis of Trainer–Trainee Exchange in the Relationship between Trainer Expertise and Output of Transfer Behavior**

Variables	Step 1 DV: Trainer–Trainee Exchange			Step 2 DV: Output of Transfer Behavior			Step 3 DV: Output of Transfer Behavior		
	B (SE)	$\beta$	t	B (SE)	$\beta$	t	B (SE)	$\beta$	t
Trainer Expertise	.872 (.037)	.770***	23.577***	.708 (.033)	.744***	21.722**	.190 (.038)	.200***	5.031***
Trainer–Trainee Exchange	–	–	–	–	–	–	.594 (.033)	.706***	17.771***
R <sup>2</sup>	.593			.553			.756		
$\Delta R^2$	.592			.552			.755		
F	555.894***			471.85***			588.758***		

Note: \*p<.05, \*\*p<.01, \*\*\*p<.001

First, the effect of trainer expertise on the trainer–trainee exchange was analyzed. As the result, the trainer expertise as an independent variable had a statistically significant effect on the

trainer–trainee exchange ( $\beta = .770$ ,  $t = 23.577$ ,  $p < .001$ ). Thus the first step of the hierarchical regression analysis for the mediation effect has been accomplished. Second, the effect of trainer expertise on the output of transfer behavior was analyzed. As the result, the trainer expertise as an independent variable had a statistically significant effect on the output of transfer behavior ( $\beta = .744$ ,  $t = 21.722$ ,  $p < .001$ ). Therefore the second step of the hierarchical regression analysis for the mediation effect has been settled. Third, to see both the independent variable and the mediating variable having its effect on the output of transfer behavior, multiple regression analysis was utilized. As the result, the trainer expertise still had statistically significant effect, however got its valued decreased than the last step ( $\beta = .200$ ,  $t = 5.031$ ,  $p < .001$ ). Additionally, trainer–trainee exchange had its statistically significant effect on the output of transfer behavior ( $\beta = .706$ ,  $t = 17.771$ ,  $p < .001$ ). Therefore, it is safe to stay that it met the requirements of the three steps to analyze the mediating effect of the trainer–trainee exchange.

## **7. Moderation of Trainee Learning Agility**

To verify the research question of “Is there a moderation effect of trainee learning agility in the relationship between trainer expertise and trainer–trainee exchange?”, hierarchical regression analysis was processed based on the illustrations by Baron & Kenny (1986). The analysis for the moderation effect is held with three steps if it’s done by the hierarchical regression analysis: 1) look into the effect of independent variable to the dependent variable, in this case trainer expertise and trainer–trainee exchange, 2) insert moderating variable to the equation to see the significance, in this case trainee learning agility, and 3) insert interactive sector between independent variable and moderating variable to see the significance with the dependent variable. If the three steps had F scores with p–value lower than .05 while having its explanatory

power of  $R^2$  be increased as the steps were progressed, it is safe to say that there is statistically significant moderation effect. The analysis is shown in <Table IV-11>.

<Table IV-11> Hierarchical Multiple Regression Analysis of Trainee Learning Agility in the Relationship between Trainer Expertise and Trainer-Trainee Exchange

Variables	DV: Trainer-Trainee Exchange					
	Model 1		Model 2		Model 3	
	$\beta$	t	$\beta$	t	$\beta$	t
Trainer Expertise	.770***	23.577***	.622***	17.643***	1.574***	7.243***
Trainee Learning Agility	—	—	.286***	8.113***	.961***	6.160***
Trainer Expertise X Trainee Learning Agility	—	—	—	—	-1.43***	-4.44***
$R^2$	.593		.653		.670	
$\Delta R^2$	.592		.652		.668	
F	555.894***		358.142***		257.057***	

Note: \*p<.05, \*\*p<.01, \*\*\*p<.001

As the result of the analysis, the F values on each of the three steps had p-value lower than .05. Additionally, explanatory power of  $R^2$  has increased from the step 2 to step 3, indicating that the moderation of the trainee learning agility is valid and statistically significant.

## 8. Moderated Mediation of Trainer-Trainee Exchange with Trainee Learning Agility

To answer the research question of “Is there a moderated mediation effect of trainer–trainee exchange in the relationship between trainer expertise and output of transfer behavior with trainee learning agility as a moderator?”, SPSS PROCESS macro was used with the model 7 developed by Hayes (2013). Although the hierarchical multiple regression analysis to find the moderating effect of trainee learning agility has found out that such effect is not significant, it may still be necessary to continue with the PROCESS to see the whole model thorough as well as to seek an implications for the improvements. The result of the analysis is shown in <Table IV–12>.

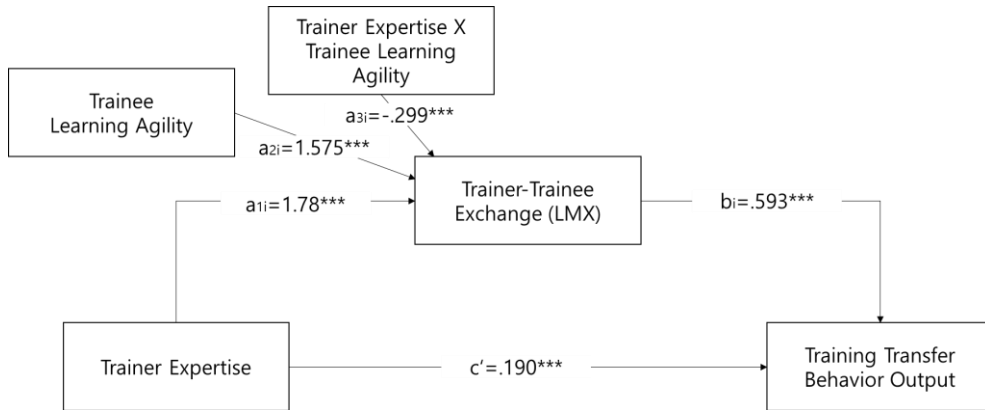
<Table IV–12> Result of Moderated Mediation analysis of Trainer–Trainee Exchange with Trainee Learning Agility as a Moderator in the Relationship between Trainer Expertise and Output of Transfer Behavior

Variables	DV: Trainer–Trainee Exchange					DV: Output of Transfer Behavior				
	$\beta$	SE	t	LLCI	ULCI	$\beta$	SE	t	LLCI	ULCI
Trainer Expertise	1.782***	.246	7.243***	1.298	2.266	.190***	.038	5.031***	.116	.265
Trainee Learning Agility	1.575***	.256	6.160***	1.072	2.077	–	–	–	–	–
Trainer–Trainee Exchange	–	–	–	–	–	.594***	.033	17.771***	.528	.659
Trainer Expertise X Trainee Learning Agility	-.299***	.067	-4.436***	-.431	-.166	–	–	–	–	–
R <sup>2</sup>	.671					.756				
F	257.057***					588.758***				

Note: \*p<.05, \*\*p<.01, \*\*\*p<.001

As discussed before, the PROCESS analysis gave the similar output to the hierarchical multiple regression, illustrating the significance of the moderation within the model. All of the relations show promising statistical significance to the model, and the moderator for the moderating mediation shows promising results. For further verification of the moderated mediation effect of the trainee learning agility, conditional indirect effects as well as the moderated mediation will be looked into.

Based on the analysis, statistical diagram was drawn as [Figure IV–1]. Through the diagram, the direct and indirect effects of variables can be seen, with addition to the promising results of the interactions between the variables.



**[Figure IV–1] Statistical Model of Moderated Mediation of trainer–trainee exchange (LMX) on the relationship between trainer expertise and trainee’s output of transfer behavior with trainee learning agility as a moderator**

As discussed before, the PROCESS analysis gave the similar output to the hierarchical multiple regression, illustrating the significance of the moderation within the model. From the relations between the variables, the mediation, and the moderation show promising statistical significance to the model. To clearly verify the moderated mediation of the model, further analysis on the conditional indirect effects are needed to be processed.

When conditional indirect effects are looked into for the dependent and independent variables at values of the moderator, the

results are illustrated as shown in <Table IV–13>. For all of the situations, of which Trainee Learning Agility being in  $-1SD$ , mean, or  $+1SD$ , there was no 0 between LLCI and ULCI. This indicates that it could be seen and significant. As  $+1SD$  holds higher effect size than mean and also towards  $-1SD$ , it can be said that as the size of the trainee learning agility increases, so does the indirect effect of the trainer expertise.

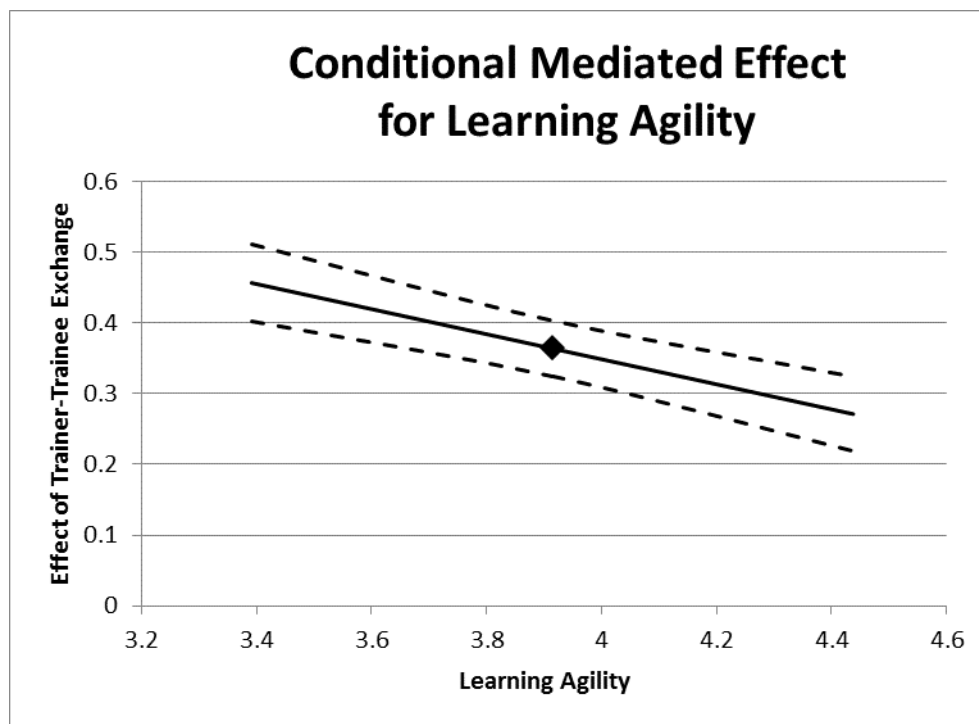
**<Table IV–13> Conditional Indirect Effects based on the size of the Trainee Learning Agility**

Trainee Learning Agility	Conditional Indirect Effect during $\pm 1SD$			
	Effect	Boot SE	Boot LLCI	Boot ULCI
$-1SD (-.3291)$	.4565	.0536	.3550	.5494
Mean (.0000)	.3638	.0390	.2954	.4459
$+1SD (.3291)$	.2711	.0529	.1686	.3743

Continuing with the PROCESS program, the index of moderated mediation shown in <Table IV–14> has additionally verified that the moderated mediation model is finalized to be significant, as 0 is not located between LLCI and ULCI. With the significance of the moderation and the mediation, as well as the difference between the conditional indirect effects based on the size and the index of the moderated mediation, it can be safely stated that the model show prominent moderated mediation of the trainer–trainee exchange.



When such findings are drawn into a graph to show the differences of the mediating effect based on the moderator, it is more evident to find the moderated mediation of the trainer–trainee exchange (see [Figure IV–2]).



[Figure IV–2] Conditional Mediated Effect for Learning Agility and the Difference in the Effect of Trainer–Trainee Exchange

As seen in the graph, through the moderating effect of learning agility on the mediation of the trainer–trainee exchange, the effect of trainer–trainee exchange has altered. Higher the learning agility gets by, the effect of the trainer–trainee exchange decreases on both mean and +,– of standard deviation. Therefore, in accordance to the index of the moderated mediation indicates, which the index is in negative, the trainer–trainee exchange is shown to have prominent effect.

<Table IV–14> Index of Moderated Mediation

Trainer–Trainee Exchange	Index	Boot SE	Boot LLCI	Boot ULCI
Trainer–Trainee Exchange	–.177	.0694	–.2874	–.0419

## **9. Discussion**

### **A) The Levels of Output of Transfer Behavior, Trainer–Trainee Exchange, Trainer Expertise, and Trainee Learning Agility**

First of all, the overall mean score of the responses were within the range of 3.52 to 3.91, indicating that they were generally over the neutral. Highest was the trainee learning agility (3.91), followed by the output of transfer behavior (3.74), trainer expertise (3.55) and trainer–trainee exchange (3.52). High level of trainee learning agility is explainable as all of the questions are hard to respond lower than neutral (Derue, Ashford, & Myers, 2012). This is due to the fact that not only did the research instrument for the learning agility intend to find people who consider themselves as highly agile on learning but also unless the survey is used as a critical reflection, it would be hard to pull out any negative response to questions that do not lure critical reflection, especially on themselves.

The lowest was on the trainer–trainee exchange, and this was possible because there are various cases of relationship among trainers and trainees. Especially when it is within Korean companies, and in addition, within SME structure. This is because there are many cases of which superior who may be the one that participant may walk into from time to time can be the S–OJT trainer, which can result in both good and bad ways. As it represents the relationship between the two people, unlike the rest of the questionnaires that were mostly focusing on one person, the fluctuation between the responses is expectable.

Although various tests were done to seek if there are any difference of the output of transfer behavior based on the general characteristics of the participants, the study was unable to show significance to the influence of the general characteristics. As various scholars indicate, that sometimes the difference in the level of education may have an effect on the transfer of learning or training. This is because there are assumptions that if the higher the education level is, so is the agility of learning. These

assumptions are widely supported as people with high education degrees have more experience in learning as well as high possibilities of being close to experience learning, but there are also various studies to indicate that the learning agility varies without a necessary correlation to the education degree.

In addition to the education degree, general characteristics such as the type of industries or the duration of the program was expected to show the differences on the level of output of transfer behavior, however, these characteristics also show no significance. Studies such as by Choi, Lee, and Jacobs (2015) present alterations due to the characteristics and the difference in support mechanism of the programs, nevertheless, the no significance evident in this study may be caused by its uniqueness of the program or was as much diverse enough to show the significance.

#### **B) Correlation between the Output of Transfer Behavior, Trainer–Trainee Exchange, Trainer Expertise, and Trainee Learning Agility**

Firstly, trainer expertise had a statistically significant positive effect on the output of transfer behavior ( $\beta = .744$ ). This indicates that the trainees who have perceived their trainers to have high level of expertise had higher output of transfer behavior than the ones with lower level. It could imply that there is a need for prepping and training trainers to exert the best output of trainees' transfer of training. This result goes along with the various results shown in literature reviews (e.g. Choi, Lee, and Jacobs, 2015).

Secondly, trainer–trainee exchange had also a high significant positive effect on the output of transfer behavior ( $\beta = .860$ ). This indicates that the trainees who have perceived their relationship with trainer to be in high level of trust and quite interactive have tendencies to show high output of transfer behavior. Thus it may imply that the creation of the workplace culture or an atmosphere to enhance the exchange relationship between the trainer and trainee so that their S–OJT may run smoothly is required to have better

outcome of the training. The notions on the importance of the atmosphere, settings, and the corporate culture towards the effect of S-OJT has been discussed through various literatures on S-OJT (e.g. Jacobs, 2003).

Third, although the model does not look closely into the direct relationship between trainees' learning agility and the output of the transfer behavior, there was a decent level of correlation between the learning agility and the output of transfer behavior. Recent studies on the learning agility have referred to the crucial act of learning agility towards the faster improvement of the performance results, however, if the time is given thoroughly for the participants, there is not much of a difference on the performance outcome as long as they all understood the contents of the training (Lombardo & Echinger, 2000). Although this study showed significant correlation between the two variables, the reason why it showed less amount of correlation is probably because the dependent variable focuses only on the actual transfer of the training in the eye of the trainee and not how easy or fast it was. Also, because it was measured by the trainees themselves, the results may not present a subjective assessment of their learning abilities. Still, this implies that the agile learners show better output of the transfer behavior.

### **C) Mediating Effect of Trainer-Trainee Exchange on the Relationship between Output of Transfer Behavior and Trainer Expertise**

Between the relationship of output of transfer behavior and the trainer expertise, the partial mediating effect of trainer-trainee exchange was found to be statistically significant. Although several studies have put trainer expertise as one of their variables to discuss about, they were mostly not the main variable to be in a discussion, and the implications on it were not been much discussed on. This is somewhat because of the fact that the importance of the trainer expertise on the transfer of training is obvious, but it should

be noted that this study has its aim to put more importance on the trainer expertise for preparing S-OJT therefore the result that showed high effect of trainer expertise in this study needs attention. It should be dully noted that the explanatory power of the mediated effect was 75.6%, exceeding the effect of trainer expertise on the exchange and on to the output of transfer behavior. What this means is that when the expertise of the trainer effects the actual output of the training, it is not only in the part where if the contents or the quality of the training has caused such output, but also the trainer's resulted interaction with the trainee is also the main part that influences the outcome.

**D) Moderated Mediation Effect of Trainer–Trainee Exchange in the Relationship between Trainer Expertise and Output of Transfer Behavior with Trainee Learning Agility as a Moderator**

First of all, there was a moderation effect between trainer expertise and the trainer–trainee exchange in a significant level. It showed that the higher the learning agility goes, the effect of trainer expertise towards trainer–trainee exchange is decreased. Which can be described as for the cases of trainees with higher learning agility, the effect of the trainer's expertise is less on the exchange relationship between the two compared to the ones with lower learning agility. This may be explained in a way that the faster learners tend to result in higher level of trainer–trainee exchange as they have less trouble on adopting and receiving new information compared to the slower learners, resulting the less need of the high competency of the trainer. This follows general theoretical perspectives of the scholars in the field of learning agility (e.g. Bedford, 2011).

Most importantly, there was a moderated mediation effect shown to be valid in the model of this study. Trainer–trainee exchange, with the trainee learning agility as a moderator, had a significant role between the relationship of trainer expertise and the

trainees' output of transfer behavior. It was shown that the mediating effect of the trainer–trainee exchange was moderated through the trainee learning agility, resulting a conditional indirect effect on the output of transfer behavior. Conditional indirect effect can be explained as the learning agility of the trainee depreciates the effect of trainer expertise on the trainer–trainee exchange, which then effects the trainee's output of transfer behavior.

## **V. Summary, Conclusion, & Implication**

### **1. Summary**

This study was conducted to seek for the moderated mediation effect of the trainer–trainee exchange in the relationship between trainer expertise and the training transfer behavior with trainee learning agility as a moderator. Various studies on S–OJT has illustrated the importance of the trainer’s expertise and the organizational support for the S–OJT to achieve maximum output for the S–OJT practice, however, they comparably neglect the importance of the relationship between trainer and trainee even though it is a dyadic relationship in the case of S–OJT. Thus this study was held to put importance of trainer–trainee exchange when looked upon the S–OJT practice held in Korean SMEs.

Total 383 collected data were utilized for the study, and with the collected data, the study has analyzed general statistics, mediation effect of trainer–trainee exchange in the relationship between trainer expertise and the output of transfer behavior, moderation effect of trainee learning agility in the relationship between trainer expertise and trainer–trainee exchange, and the moderated mediation effect of trainer–trainee exchange in the relationship between trainer expertise and the output of transfer behavior with trainee learning agility as a moderator. Analysis have shown that there was no significant difference in the output of transfer behavior based on the general characteristics of the participants, thus the rest of the analysis did not hold any dummy variables.

Mediating effect of trainer–trainee exchange and moderating effect of trainee learning agility have shown to be statistically significant with  $p < .001$ . Each of the effects were analyzed through hierarchical regression analysis based on Baron & Kenny (1986), with additional verification through PROCESS Macro developed by Hayes (2013). Moderated mediation effect of trainer–trainee exchange has been confirmed through Hayes’s (2013) PROCESS

analysis of seeking conditional indirect effects. The result indicated that through the moderating effect of learning agility on the mediation of the trainer–trainee exchange, the effect of trainer–trainee exchange has altered. Higher the learning agility gets by, the effect of the trainer–trainee exchange decreases on both mean and +, – of standard deviation. Such conditional indirect effect can be illustrated as the learning agility of the trainee depreciates the effect of trainer expertise on the trainer–trainee exchange, which then effects the trainee’s output of transfer behavior.

## **2. Conclusion**

This study was formed to find the moderated mediation of trainer–trainee exchange in the relationship between trainer expertise and the output of transfer behavior with trainee learning agility as a moderator. Also, it had its purpose to seek for the data on the participants of S–OJT held in Korean SMEs. Based on the findings from the analysis of data, the following conclusions were made.

First, the overall mean score of the responses were within the range of 3.52 to 3.91, indicating that they were generally over the neutral. Most of the constructs within the variables had their range of measurements from minimum of 2 Likert points to maximum of 5 Likert points, however, few constructs showed exceptions. Trainer–trainee exchange had the constructs of “mutual respect for the capabilities of the other” and “anticipation of deepening reciprocal trust with the other” lower than 2 Likert points for the minimum. Same result was shown for the “work expertise” within the variable of trainer expertise. For the trainer–trainee exchange, the fluctuation of the measurement ranges widely as it sees through the relationship between the trainer and trainee by the trainee, thus few constructs may show the worse, representing the low level of exchange relationship perceived by the trainee, but does not imply that few constructs were depicted positive when the other were negative. However, in the case of trainer expertise, there were



some incidences where the trainer's work expertise were depicted as high when their training expertise were depicted as low. This result may have been caused by the lack of effective training conducted for the development of the trainers or the interaction between the trainer and the trainee and the exchange outcome from it may have influenced the measurement. Nevertheless, there seems to be a need for additional or effective training for the development of the trainers for S-OJT practices.

Second, although various tests were done to seek if there are any difference of the output of transfer behavior based on the general characteristics of the participants, the study was unable to show significance to the influence of the general characteristics. This may have eased the statistical calculations for this study, however, it does interfere with various literature reviews that mostly had significant influence from the education degree, type of industry, or the duration of the training program. Still, it could be told that the education degree does not influence the output due to the one-to-one characteristics of S-OJT, of which trainer will focus on specific trainee, that will result a customization of the learning. Also, the type of industry and the duration may be aligned depending on the work settings and tasks, which may not necessarily affect the willingness to transfer their learnings.

Third, trainer expertise holds high accounts towards the trainee's output of transfer behavior. This supports notions made by Jacobs (2003) or Choi, Lee, and Jacobs (2015) in regards to the importance of the trainer expertise in the context of S-OJT. As the S-OJT is held mostly with the single trainer and very few, or one trainee, the impact of trainer's competency, on both of his actual skills to do the work as well as the skills of training. As the result of the survey mostly contained lower values of training competency compared to the work competency, the importance of training the trainer is presented.

Forth, a close relationship between the trainer and the trainee helps trainee to transfer their learning into the workplace. The high level of relationship may be mostly caused through the fluent and

great way of OJT, which may indicate that the outcome was more heavily caused by the expertise of the trainer. However, relationship is a dichotomous thing, unlike an expertise or an attitude. Creating a platform, atmosphere, or environment for people to be more people-friendly might help a potential trainer and trainee relationships.

Fifth, the learning agility does play a role in the context of S-OJT and the relationship between the trainer and the trainee. There was a moderation effect between trainer expertise and the trainer-trainee exchange in a significant level. It showed that the higher the learning agility goes, the effect of trainer expertise towards trainer-trainee exchange is decreased.

Most importantly, the moderated mediation of the trainer-trainee exchange with learning agility as a moderator illustrates both the role of the learning agility as well as the trainer expertise on the ending output of the S-OJT practice. This illustrates the vast importance of the expertise of the trainer to have the best outcome of the S-OJT and thus shows the needs for better preparation of trainers.

### **3. Implication**

This research looks into the importance of the relationship between the trainer and the trainee when the structure on-the-job is constructed for the small and medium sized enterprises. It also focuses on the training of trainers in the preparation of the structured on-the-job training. As the model presented through this study looks into the output of transfer behavior, trainer-trainee exchange, trainer expertise, and the trainee learning agility, the study aimed to seek the possible way of creating a standard for the preparation of the S-OJT. The implications are divided into two categories; the implications for the practice of S-OJT in SMEs as well as the implications for the further research.

## A. Implications for Practice

First, to improve the overall transfer of OJT in SMEs, companies should provide necessary intervention for the development of trainer expertise, trainer–trainee exchange, and the trainee learning agility. Through the analysis, the study has found a subjective amount of effect held by trainer expertise and trainer–trainee exchange on the output of transfer behavior. Also, the positive correlation between the trainer expertise, trainer–trainee exchange, and the trainee learning agility with the output of transfer behavior cannot be neglected for its significance. If the trainer is highly professional on both of the learning contents as well as the provision of the training, the better S–OJT trainee will receive that leads to the transfer of the training. Genuine training for potential S–OJT trainer may be necessary for the SMEs, and if such is hard due to the lack of budget, focusing on the development of OJT training skills may be a way to minimize the issue.

Second, if the focus on the improvement of trainer expertise cannot be met, try focusing on the shaping the culture and the atmosphere of the organization so that the training held within the workplace can be influenced by the environment. This may lead to the increase of the trainer–trainee exchange, which can result in the increase of the output of transfer behavior. Surely hiring the agile learners may help not only the exchange relationship but also the less input towards the training, but it may be hard to evaluate during the selection process.

Third, LMX has various literatures that looks closely into the relationship with the turnover intention and the organizational commitment. Although this study did not look closely into such variables, it is crucial to know that the impact of training experience during the early stage of life in the organization has great impact on the turnover intention of the new employees (Jacobs, 2003) and so does the LMX when the employees are stationed into the team or the department (Graen & Uhl–Bien, 1995). Thus for SMEs who have lesser chance of group formal training and more chance of OJT

for both development of competency and assimilation, paying attention to keeping up with the high level of trainer–trainee exchange may be vital on keeping new employees from leaving the organization.

Lastly, based from the result of the study, of which illustrated that for the trainees with high agility, the high level of expertise may have negative effect with their relationship to pull out the transfer of the training, SMEs might need to seek for the alternative training method or additional training method for such trainees. As S–OJT is highly influenced from the relationship due to its basic structure of being dyadic interactive training method, if such relationship turns out negative, the training outcome might not come out as anticipated. Thus for the trainees with high agility, who have high agile of learning and adopting new knowledge and skills (Bedford, 2007), informal learning or self–directed learning structure of the training may output more improvement of the performance.

## **B. Implications for Research**

First, there is a need for the use of subjective research instrument for the learning agility. This study utilized the research instrument used and suggested by Bedford (2011), however, the questionnaire is formed with questions that are hard to note less than a neutral when self–evaluated, which may cause statistical flaw or the insignificant results. Literatures on the learning agility have continually had a debate on the various research instruments and their right use of it based on the context and the target, however, as the subject got its attention recently, there are still no consensus on the major tool to use on measuring the learning agility.

Second, although the current study contained no significant effect of general characteristics on the output of transfer behavior, further studies on the transfer or the transfer behavior from the S–OJT should look closely into various characteristics especially of

the degree of education, types of industries, duration of the training program, and so on. This is because most of the relevant studies have noted about the influence of such characteristics on the results, thus they had to control them, however, as this study concluded that they weren't as effective, they were not controlled. Additional studies on the trainer expertise or the trainer–trainee exchange should still pay attention to the attribute that the individual characteristics can play in the agenda.

Third, this study focused on the SMEs in Korea, however, studies on the large corporates as well as the comparative study is suggested to see the difference of trainer's expertise as a trainer and not only as a senior worker. Unlike SMEs where there are more tendencies of “unexpected trainer”, S–OJT trainers in large corporations tend to know whether they will play a role as a trainer in upcoming days through notification and the trainer–training programs. This means that there are high probable of large corporations to have more trainers with high level of trainer expertise, which may show different result with the model of this study.

Forth, although this study used model 7 of PROCESS by Hayes (2013) that looks closely into the moderated mediation, model 6 with two mediators and model 8 with additional moderation effect on direct effect of independent variable to dependent variable is recommended as a model to be discussed in the future studies. Model 8 is highly suggested as there is not much of literature reviews to be found on the relationship between trainer expertise and the trainee learning agility, thus the use of learning agility as a moderator seems plausible, there are studies on the relationship between trainer's way of training or the interaction with the trainer and the trainee learning agility. Therefore, model 6 with two mediators is also recommended with slight change on research instruments to fit the research objectives.

Lastly, the major setback of this research is that the SMEs were the participants of the “Work and Learning Dual System” program, which is not primarily focused on providing S–OJT to the

SMEs but to provide workers the opportunity to learn and work with support. Thus the program may have less strict criteria on checking whether the proper S-OJT is held in the participatory companies as it is not part of the program's objective. Thus it would be better to find different target population for sampling to make sure the proper S-OJT is held in the participatory companies.

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## 국문초록

본 연구의 목적은 중소기업 체계적 현장직무 교육훈련(S-OJT)에 참가하는 훈련가의 전문성, 훈련생의 학습 민첩성, 그리고 훈련가-훈련생의 교환관계가 훈련생의 훈련전이행동 산출에 미치는 영향을 확인하는 데 있다. 다시 말해, 중소기업 S-OJT 훈련가의 전문성, 훈련생의 학습 민첩성, 훈련가-훈련생의 교환관계, 훈련생의 훈련전이행동 산출 등의 수준 및 차이를 구체적으로 구명함으로써 이들의 관계 및 영향력을 설명하는 데 의의가 있다.

목표 모집단은 고용노동부에서 주관하고, 한국산업인력공단에서 관리 및 운영하는 일학습병행제 사업에 참여한 기업으로 설정하였으며, 표본은 S-OJT 훈련생 383명이었다. 자료수집을 위해 S-OJT 훈련가 전문성, 학습 민첩성, 훈련가-훈련생 교환관계, 훈련전이행동 산출으로 구성된 조사도구를 활용하였다. 자료수집은 2017년 3월 20일부터 4월 21일까지 이루어졌으며 배포된 총 410부 중 390부(회수율 95.1%)가 회수되었으며 불성실응답, 미응답자료 등을 제거하여 383부를 분석에 활용하였다. 수집된 자료는 매개효과, 조절효과, 조절된 매개효과를 알아보기 위하여 Window SPSS 24 및 AMOS 18 통계 프로그램을 이용하여 분석하였으며, 통계적 유의수준은 5%로 설정하여 처리하였다. 주요 통계방법은 빈도, 백분율, 평균, 표준편차 등의 기술통계를 활용하였으며, 변인 간 관계 구명을 위해 t-test, ANOVA, 상관분석, 회귀분석을 활용하였다. 조절된 매개효과를 분석하기 위해 PROCESS 모형을 활용하여 회귀분석을 실시하였고 부트스트래핑(Bootstrapping)을 통해 유의성을 검증하였다.

분석 결과가 다음과 같다. 첫째, 훈련가 전문성 수준은 평균 3.55, 훈련생의 학습 민첩성 수준은 3.91, 훈련가-훈련생 교환관계 수준은 3.52, 훈련생의 훈련전이행동 산출은 3.74로 보통보다 약간 높은 수준으로 나타났다. 둘째, 인구통계학적 특성에 따른 훈련전이행동 산출 수준의 차이를 살펴본 결과, 성별, 연령, 학벌, 업종, 훈련기간 등의 인구통계학적 특성 변인에 따른 차이는 없는 것으로 나타났다. 셋째, 이 연구에서 제시한 훈련전이행동 산출, 훈련가-훈련생 교환관계, 학습 민첩성, 훈련가 전문성 등의 변인들은 각각 상관관계를 갖고 있는 것으로 나타났다. 훈련전이행동 산출은 교환관계와 .860, 훈련가 전문성과 .744, 훈련생 학습 민첩성과 .592로 높은 상관관계를 보였고,

훈련가-훈련생 교환관계는 훈련가 전문성과 .770, 훈련생 학습 민첩성과 .608로 높은 상관관계를 보였다. 넷째, 중소기업 S-OJT 훈련가 전문성과 훈련생의 훈련전이행동 산출의 관계에서 훈련가-훈련생 교환관계는 부분매개효과를 갖는 것으로 나타났다. 1단계 분석에서 훈련가 전문성이 훈련가-훈련생 교환관계에 미치는 영향이 통계적으로 유의한 것으로 나타났고 ( $\beta = .770$ ,  $p < .001$ ), 2단계 분석에서 훈련가 전문성이 훈련생의 훈련전이행동 산출에 미치는 영향이 통계적으로 유의한 것으로 나타났으며 ( $\beta = .744$ ,  $p < .001$ ), 3단계 분석에서 각각 유의한 결과 ( $\beta = .200$ ,  $p < .001$ ;  $\beta = .706$ ,  $p < .001$ )가 도출되어 부분 매개효과를 확인할 수 있었다. 다섯째, PROCESS를 통해 훈련가-훈련생 교환관계의 조절된 매개효과를 본 결과, 중소기업 S-OJT 훈련가 전문성과 훈련생의 훈련전이행동 산출의 관계에서 훈련가-훈련생 교환관계가 학습민첩성에 의한 조절된 매개효과를 갖는 것으로 나타났다. 1단계에서 훈련가 전문성, 훈련생 학습 민첩성, 훈련가 전문성과 훈련생 학습 민첩성의 상호작용이 훈련가-훈련생 교환관계에 미치는 영향이 각각 통계적으로 유의한 것으로 나타났고 ( $\beta = 1.78$ ,  $p < .001$ ;  $\beta = 1.575$ ,  $p < .001$ ;  $\beta = -.299$ ,  $p < .001$ ), 2단계에서 훈련가-훈련생 교환관계, 훈련가 전문성이 훈련생 훈련전이행동 산출에 미치는 영향 또한 각각 통계적으로 유의한 것으로 ( $\beta = .593$ ,  $p < .001$ ;  $\beta = .190$ ,  $p < .001$ ) 나타났다. 훈련가-훈련생 교환관계의 조절된 매개효과 지수는  $-.177$ 로 학습 민첩성이 높아짐에 따라 훈련가-훈련생 교환관계의 영향은 감소하는 것으로 나타났다.

본 연구의 결론을 정리하자면, 첫째, 한국 중소기업 S-OJT 훈련가 전문성, 훈련생 학습 민첩성, 훈련가-훈련생 교환관계, 훈련전이행동 산출은 보통보다 조금 높은 수준으로 나타났으나, 훈련가 훈련에 대한 전문성이 업무에 대한 전문성에 비하여 낮은 수준으로 확인되었다. 둘째, S-OJT를 통해 훈련전이행동의 산출은 성별, 연령, 학벌, 업종, 훈련기간 등에 따른 특별한 차이가 나타나지 않았다. 셋째, S-OJT 훈련가 전문성과, 훈련생 학습 민첩성, 훈련가-훈련생 교환관계, 훈련전이행동 산출 등 변인간의 높은 상관관계가 확인되었다. 넷째, 중소기업 S-OJT 훈련가 전문성과 훈련전이행동 산출은 유의한 정적 관계가 있었으며 학습 민첩성은 조절변인으로서 유의한 효과가 있었고, 훈련가-훈련생 교환관계는 매개변인과 조절된 매개변인으로서 유의한 효과가 있었다.

이와 같은 결론을 토대로 다음과 같은 사항을 제언하고자 한다.

첫째, 훈련가 전문성 중 훈련에 대한 전문성이 업무에 대한 전문성에 비해 낮게 도출된 것을 감안하여 일학습병행제를 통한 S-OJT 준비 절차에서 훈련가 준비 부분의 강화가 요구된다. 둘째, 분석결과에서도 제시되었던 바와 같이, S-OJT 훈련가 전문성은 훈련생의 훈련전이행동 산출에 높은 정적인 효과를 보인 만큼 S-OJT 준비 단계에서 훈련가 대상의 훈련이 반드시 진행되어야 한다. 셋째, 해당 연구에서 제시한 훈련가-훈련생 교환관계는 리더-부하 교환관계 문항을 상황에 적절하게 변환한 바에 따라 훈련가-훈련생 교환관계를 좀 더 명확히 볼 수 있는 도구의 개발이 필요하다. 넷째, 학습자의 학습 민첩성이 부정적 조절효과를 보인 만큼 효과적인 S-OJT 활동을 위해 훈련가-훈련생 교환관계 증진을 위한 인터벤션의 도입이 요구된다. 다섯째, 학습 민첩성이 높아질수록 훈련가-훈련생 교환관계의 매개효과가 낮아지는 것이 보여진 만큼 해당 훈련생을 위한 무형식학습 또는 자기주도학습 기반의 훈련이나 추가적인 인터벤션의 도입이 필요하다. 여섯째, 학습 민첩성의 조절효과를 비교하기 위하여 PROCESS 모형 중 모델 8을 도입하여 조절된 매개효과와 조절효과를 비교하여 학습 민첩성이 높은 훈련생의 S-OJT 활용에 대한 효과성을 추가적으로 보여줄 수 있는 연구가 필요하다.

**주요어 :** 체계적 현장직무 훈련, S-OJT, 훈련가 전문성, 학습 민첩성, 훈련가-훈련생 교환관계, 훈련전이행동 산출

**학번 :** 2015-23111

## Appendix

Appendix 1. Pre-Survey Questionnaire (Korean).....	106
Appendix 2. Main Survey Questionnaire (Korean).....	113

국내 중소기업 S-OJT 훈련생 업무성과와 훈련가 전문성의 관계:  
학습 민첩성에 의한 LMX의 조절된 매개효과에 관한 설문지

안녕하십니까?

『국내 중소기업 S-OJT 훈련생 업무성과와 훈련가 전문성의 관계:  
학습 민첩성에 의한 LMX의 조절된 매개효과』 연구를 수행하고 있  
는 서울대학교 대학원 농산업교육과 석사과정 김범준 입니다.

먼저 바쁘신 와중에도 시간을 내어 주셔서 깊은 감사의 말씀을 드립  
니다.

질문지는 총 5면이며, 응답하는데 걸리는 소요시간은 약 13분입니  
다. 조사결과는 통계법 제 8조에 의거하여 익명으로 처리되므로 특정  
한 개인이나 기업의 특성은 노출되지 않으며, 오직 연구를 위한 자료  
로만 활용될 것임을 약속드립니다.

또한, 응답하지 않은 문장이 하나라도 있으면, 그 설문지는 분석할  
수 없으니 한 문항도 빠짐없이 응답하여 주시기를 부탁드립니다. 귀하  
의 솔직하고 성의 있는 응답은 본 연구를 위해 매우 귀중한 자료가  
될 것 입니다.

응답과 관련하여 문의사항이 있으시면, 아래 연락처로 연락하여 주  
시기를 바랍니다. 응답과 관련하여 의문사항이 있으시면 아래 연락처  
로 연락 주시기 바랍니다. 바쁘신 와중에도 귀중한 시간을 할애하여  
주신 점에 깊은 감사를 드리며, 귀하께서 하시는 모든 일이 성취되기  
를 바랍니다.

2017년 3월

지도교수: 이 찬  
석사과정: 김범준

I. 다음은 귀하가 느끼는 학습 성과에 대하여 묻는 문항입니다.  
 각 항목을 잘 읽으시고 귀하의 생각과 가장 일치되는 번호에 √표를  
 해주십시오.

<u>교육훈련을 통한 업무 성과</u>	전혀 그렇지 않다	그렇지 않다	보통 이다	그렇다	매우 그렇다
1. S-OJT 활동을 통해 업무에 대한 이해가 높아졌다.	①	②	③	④	⑤
2. S-OJT 활동을 통해 전문성 있는 새로운 지식을 업무에 활용하였고, 성과향상에 도움이 되었다.	①	②	③	④	⑤
3. S-OJT 활동을 통해 전문성 있는 새로운 기술을 업무에 활용하였고, 성과향상에 도움이 되었다.	①	②	③	④	⑤
4. S-OJT 활동을 통해 업무에 대한 나의 관점이 달라졌다.	①	②	③	④	⑤
5. S-OJT 활동을 통해 업무에 대한 나의 태도가 달라졌다.	①	②	③	④	⑤
6. S-OJT 활동 후 업무 수행 방식이 개선되었다.	①	②	③	④	⑤

II. 다음은 귀하가 느끼는 훈련가와의 관계에 대한 인식을 묻는 문항입니다. 각 항목을 잘 읽으시고 귀하의 생각과 가장 일치되는 번호에 V표를 해주십시오.

<u>훈련가-훈련생 교환관계</u>	전혀 그렇지 않다	그렇지 않다	보통 이다	그렇다	매우 그렇다
1. 나의 훈련가는 나의 업무 활동에 만족한다.	①	②	③	④	⑤
2. 나의 훈련가는 내가 가지고 있는 문제와 욕구에 대해 잘 이해하고 있다.	①	②	③	④	⑤
3. 나의 훈련가는 나의 잠재력을 충분히 인정한다.	①	②	③	④	⑤
4. 내가 훈련 내 업무를 수행하는 도중에 문제가 생기면, 나의 훈련가는 자신이 가진 권한을 활용하여 개인적으로 나를 도와준다.	①	②	③	④	⑤
5. 도움을 필요로 할 때 나의 훈련가는 자신의 희생을 감수하고 나를 도와준다.	①	②	③	④	⑤
6. 나의 훈련가는 내가 없더라도 내가 내린 결정에 대해 지지해 줄 것이다.	①	②	③	④	⑤
7. 교육훈련에 있어서 나는 훈련가와 매우 원만한 관계를 유지하고 있다.	①	②	③	④	⑤



III. 다음은 훈련가로서 역할을 수행하고 있는 선배 직원의 전문성에 대하여 묻는 문항입니다. 각 항목을 잘 읽으시고 귀하의 생각과 가장 일치되는 번호에 √표를 해주십시오.

<u>나의 훈련가는~</u>	전혀 그렇지 않다	그렇지 않다	보통 이다	그렇다	매우 그렇다
1. 업무에 대한 전문적인 지식과 기술을 가지고 있다.	①	②	③	④	⑤
2. 업무에 대한 풍부한 경험을 가지고 있다.	①	②	③	④	⑤
3. 업무 상황에서 발생하는 문제에 대한 해결능력이 뛰어나다.	①	②	③	④	⑤
4. 나의 업무 수행 수준 및 업무특성을 반영한 훈련 활동을 준비하였다.	①	②	③	④	⑤
5. 단어, 제스처 등의 적절한 표현을 활용하여 훈련내용을 효과적으로 전달하였다.	①	②	③	④	⑤
6. 훈련 상황에서 나의 의견을 적극적으로 귀담아 듣는다.	①	②	③	④	⑤
7. 내가 수행한 실습내용에 대한 의견을 명확하게 제시하였다.	①	②	③	④	⑤
8. 내가 훈련에 적극적으로 참여하도록 동기를 유발한다.	①	②	③	④	⑤
9. 훈련 상황 시 발생한 문제에 대해 해결능력이 뛰어나다.	①	②	③	④	⑤

IV. 다음은 귀하가 일터에서의 새롭고 낯선 상황에 빠르게 대처하기 위해 학습을 활용하고, 이를 통해 성장하려는 정도에 대하여 묻는 문항입니다. 각 항목을 잘 읽으시고 귀하의 생각과 가장 일치되는 번호에 √표를 해주십시오.

<u>나는~</u>	전혀 그렇지 않다	그렇지 않다	보통이다	그렇다	매우 그렇다
1. 일터에서 일어나는 일에 대한 호기심이 많고, 무엇이든 알고 싶어 한다.	①	②	③	④	⑤
2. 일터에서 상사나 동료로부터의 의견을 적극적으로 받아들이고, 이를 실제 행동에 옮긴다.	①	②	③	④	⑤
3. 일터에서 무언가 일이 제대로 되지 않았을 때, 상황에 유연하게 대처하고, 문제 접근방식을 조정한다.	①	②	③	④	⑤
4. 평소 나의 강점과 단점을 잘 알고 있다.	①	②	③	④	⑤
5. 일터에서 새로운 지식과 기술을 습득하고자 한다.	①	②	③	④	⑤
6. 나는 일터에서 나의 성장과 발전을 위해 노력한다.	①	②	③	④	⑤
7. 일터에서 도전과 새로운 경험을 얻기 위해 노력을 기울인다.	①	②	③	④	⑤
8. 일터에서 변화와 새로운 아이디어에 대해 개방적이다.	①	②	③	④	⑤
9. 일터에서 실수했을 때, 자신을 되돌아보고 그로부터 배울 점을 찾으려 한다.	①	②	③	④	⑤

## V. 일반사항

다음은 귀하의 일반적인 상황에 대한 질문입니다.

해당번호에 √표를 하시거나 정확한 내용을 기입하여 주시기 바랍니다.

1. 귀하의 성별은?

① 남 (    ) ② 여 (    )

2. 귀하의 연령은 만으로 몇 세입니까?

(                      )

3. 귀하의 최종학력은?

① 고졸 (    ) ② 전문대졸 (    ) ③ 학사(4년제 졸) (    )  
④ 대학원 이상 (    )

4. 귀사의 업종은?

① 사무관리직 (    ) ② 전문직 (    ) ③ 생산직 (    )  
④ 서비스직 (    ) ⑤ 기타 업종 (                      )

5. 귀하가 현재 직무를 전담한 기간은?

(                      )

-끝까지 응답해주셔서 진심으로 감사합니다-

국내 중소기업 S-OJT 훈련생의 훈련전이행동와 훈련가 전문성의 관계: 학습 민첩성에 의한 LMX의 조절된 매개효과에 관한 설문지

안녕하십니까?

『국내 중소기업 S-OJT 훈련생의 훈련전이행동와 훈련가 전문성의 관계: 학습 민첩성에 의한 LMX의 조절된 매개효과』 연구를 수행하고 있는 서울대학교 대학원 농산업교육과 석사과정 김범준입니다.

먼저 바쁘신 와중에도 시간을 내어 주셔서 깊은 감사의 말씀을 드립니다.

질문지는 총 5면이며, 응답하는데 걸리는 소요시간은 약 10분입니다. 조사결과는 통계법 제 8조에 의거하여 익명으로 처리되므로 특정한 개인이나 기업의 특성은 노출되지 않으며, 오직 연구를 위한 자료로만 활용될 것임을 약속드립니다.

또한, 응답하지 않은 문장이 하나라도 있으면, 그 설문지는 분석할 수 없으니 한 문항도 빠짐없이 응답하여 주시기를 부탁드립니다. 귀하의 솔직하고 성의 있는 응답은 본 연구를 위해 매우 귀중한 자료가 될 것 입니다.

응답과 관련하여 문의사항이 있으시면, 아래 연락처로 연락하여 주시기를 바랍니다. 응답과 관련하여 의문사항이 있으시면 아래 연락처로 연락 주시기를 바랍니다. 바쁘신 와중에도 귀중한 시간을 할애하여 주신 점에 깊은 감사를 드리며, 귀하께서 하시는 모든 일이 성취되기를 바랍니다.

2017년 4월

지도교수: 이 찬  
석사과정: 김범준

I. 다음은 귀하가 느끼는 훈련 성과에 대하여 묻는 문항입니다.  
 각 항목을 잘 읽으시고 귀하의 생각과 가장 일치되는 번호에 √표를  
 해주십시오.

<u>교육훈련 성과</u>	전혀 그렇지 않다	그렇지 않다	보통 이다	그렇다	매우 그렇다
1. 훈련을 통해 새롭게 터득한 지식이나 기술은 내 업무 평가를 높이는 데 도움이 되었다.	①	②	③	④	⑤
2. 훈련을 마친 후, 나는 주어진 과업을 이전보다 더 빠르게 수행할 수 있었다.	①	②	③	④	⑤
3. 훈련을 마친 후, 나는 주어진 과업을 이전보다 더 빠르게 완료한 경험이 있다.	①	②	③	④	⑤
4. 훈련을 통해 새롭게 습득한 지식이나 기술은 내게 과업을 이전보다 더 잘 수행하게 했다.	①	②	③	④	⑤
5. 훈련을 통해 새롭게 습득한 지식이나 기술은 내 업무의 질을 향상시켰다.	①	②	③	④	⑤
6. 훈련을 통해 새롭게 습득한 지식이나 기술은 내 업무상 실수를 줄이는 데 도움이 되었다.	①	②	③	④	⑤

II. 다음은 귀하가 느끼는 훈련가(선배 직원 또는 전문가)와의 관계에 대한 인식을 묻는 문항입니다. 각 항목을 잘 읽으시고 귀하의 생각과 가장 일치되는 번호에 √표를 해주십시오.

<u>훈련가-훈련생 교환관계</u>	전혀 그렇지 않다	그렇지 않다	보통 이다	그렇다	매우 그렇다
1. 나의 훈련가는 내 업무 활동과 태도에 만족한다.	①	②	③	④	⑤
2. 나의 훈련가는 내가 가지고 있는 문제와 욕구에 대해 잘 이해하고 있다.	①	②	③	④	⑤
3. 나의 훈련가는 업무에 대한 내 잠재능력을 충분히 인정한다.	①	②	③	④	⑤
4. 훈련 도중 내 업무 수행에 문제가 생기면, 나의 훈련가는 자신의 권한을 활용하며 내게 개인적인 도움을 준다.	①	②	③	④	⑤
5. 도움을 필요로 할 때, 나의 훈련가는 자신의 희생을 감수하며 나를 도와줬다.	①	②	③	④	⑤
6. 내가 부재 상태라도, 나의 훈련가는 내가 내린 결정을 지지해 줄 것이다.	①	②	③	④	⑤
7. 교육훈련 동안, 나는 훈련가와 매우 원만한 관계를 유지했다.	①	②	③	④	⑤

III. 다음은 훈련가로서 역할을 수행하고 있는 선배 직원의 전문성에 대하여 묻는 문항입니다. 각 항목을 잘 읽으시고 귀하의 생각과 가장 일치되는 번호에 √표를 해주십시오.

<u>나의 훈련가는~</u>	전혀 그렇지 않다	그렇지 않다	보통 이다	그렇다	매우 그렇다
1. 업무에 도움이 될 전문적인 지식과 기술을 가지고 있다.	①	②	③	④	⑤
2. 업무에 대한 실제적인 경험이 풍부하다.	①	②	③	④	⑤
3. 업무 중 발생하는 문제에 대한 해결능력이 뛰어나다.	①	②	③	④	⑤
4. 내 업무 수행 수준을 잘 파악하고 있었으며, 업무 특성을 반영한 훈련 활동을 준비하였다.	①	②	③	④	⑤
5. 훈련 내용의 효과적인 전달을 위해, 전문 용어 및 단어, 제스처 등을 적절하게 활용했다.	①	②	③	④	⑤
6. 훈련 상황에서 나의 의견을 귀담아 들었다.	①	②	③	④	⑤
7. 나의 실습 과정과 내용에 대해 훈련가 자신의 의견을 명확하게 제시했다.	①	②	③	④	⑤
8. 내가 훈련에 적극적으로 참여하도록 동기를 부여한다.	①	②	③	④	⑤
9. 훈련 도중 발생한 문제에 대해 해결능력이 뛰어나다.	①	②	③	④	⑤

IV. 다음은 귀하가 일터에서의 새롭고 낯선 상황에 빠르게 대처하기 위해 학습을 활용하고, 이를 통해 성장하려는 정도에 대하여 묻는 문항입니다. 각 항목을 잘 읽으시고 귀하의 생각과 가장 일치되는 번호에 √표를 해주십시오.

<u>나는~</u>	전혀 그렇지 않다	그렇지 않다	보통이다	그렇다	매우 그렇다
1. 일터에서 일어나는 모든 상황에 대해 호기심이 많아 무엇이든 알고 싶어 한다.	①	②	③	④	⑤
2. 일터에서 상사나 동료로부터의 의견을 적극적으로 수용하고, 이를 실제 행동에 옮긴다.	①	②	③	④	⑤
3. 일터에서 업무가 제대로 수행되지 않았을 때, 상황에 유연하게 대처하며 새로운 문제 해결 방법을 모색한다.	①	②	③	④	⑤
4. 평소 내 장점과 단점을 잘 알고 있다.	①	②	③	④	⑤
5. 일터에서 새로운 지식과 기술을 습득하고자 한다.	①	②	③	④	⑤
6. 일터에서 자신의 성장과 발전을 위해 노력한다.	①	②	③	④	⑤
7. 일터에서 새로운 도전과 경험을 얻기 위해 노력한다.	①	②	③	④	⑤
8. 일터에서 진취적인 변화와 새로운 아이디어에 대해 개방적이다.	①	②	③	④	⑤
9. 일터에서 실수했을 때, 자신을 되돌아보고 그로부터 배울 점을 찾으려 한다.	①	②	③	④	⑤



## V. 일반사항

다음은 귀하의 일반적인 상황에 대한 질문입니다.

해당번호에 √표를 하시거나 정확한 내용을 기입하여 주시기 바랍니다.

1. 귀하의 성별은?

① 남 (    ) ② 여 (    )

2. 귀하의 연령은 만으로 몇 세입니까?

(                      )

3. 귀하의 최종학력은?

① 고졸 (    ) ② 전문대졸 (    ) ③ 학사(4년제 졸) (    )  
④ 대학원 이상 (    )

4. 귀사의 업종은?

① 사무관리직 (    ) ② 전문직 (    ) ③ 생산직 (    )  
④ 서비스직 (    ) ⑤ 기타 업종 (                      )

5. 귀하가 현재 직무를 전담한 기간은?

(                      )

-끝까지 응답해주셔서 진심으로 감사합니다-